



Oxide copper extracted from the open pit

**ASX Code:**

SFR

**Issued Capital:**

Ordinary Shares 151M  
Options 9M

**Major Shareholders:**

OZ Minerals 19.8%  
POSCO 15.7%

**Directors:**

**Derek La Ferla**  
Non-Executive Chairman

**Karl M. Simich**  
Managing Director and CEO

**W. John Evans**  
Executive Technical Director

**Jonghun Jong**  
Non-Executive Director

**Robert Scott**  
Independent Non-Executive  
Director

**Management:**

**Matthew Fitzgerald**  
CFO & Company Secretary

**Martin Reed**  
Project Manager

**Robert Klug**  
Commercial Manager – Legal



**SANDFIRE RESOURCES NL**

**DECEMBER 2011 QUARTERLY ACTIVITIES REPORT**

**HIGHLIGHTS**

- **Construction of DeGrussa mine and infrastructure progressing well, with the overall project now +60% complete.**
- **Underground decline development has advanced +1000m from the portal, with 300m remaining to first sulphide ore.**
- **Open pit mining on schedule with 5.0Mbcm mined to date including oxide copper mineralisation, approximately 10m above first DSO.**
- **Process plant construction +45% complete with overall schedule on track for first ore into the SAG mill in Q3 2012.**
- **Product sales contracts secured with MRI Trading AG and China Yunnan Copper covering 100% of Direct Shipping Ore production – first sales on track for Q2 CY2012.**
- **Discussions proceeding with customers for the sale of concentrate.**
- **First draw-down of funding under \$390M Project Loan Facility completed to underpin project development and construction.**
- **Follow-up drilling confirms widths and grades of gold mineralisation at the DGAC1042 gold anomaly, 11km SW of DeGrussa.**



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## 1.0 OVERVIEW

Sandfire is poised to become a leading mid-tier Australian copper-gold producer during 2012 as it continues to meet key milestones in the development and construction of its flagship asset, the 100%-owned DeGrussa Copper-Gold Project in Western Australia.

The Company made further excellent progress during the December 2011 Quarter, with overall project development now over 60 per cent complete and the Company on track for its first shipment of high-grade Direct Shipping Ore (DSO) from the open pit in April 2012.

Sandfire is undertaking concurrent development of an open pit and a longer term underground mine at DeGrussa. The Stage 1 open pit is on schedule, with a total of 5.0 million bcm (bank cubic metres) of material mined to date, while the “Evans Decline” has progressed over 1,000 metres from the portal. Total underground development passed the 1.5km mark during the Quarter.



Significant progress was also achieved on construction of the 1.5Mtpa DeGrussa concentrator during the Quarter with construction of major concrete foundations for the SAG mill, ball mill and crushed ore bin completed and first steel fabrication underway. The concentrator was over 40 per cent complete by Quarter-end.

Other highlights included significant progress with construction of the airstrip, completion of the installation of the 600-person accommodation village rooms and establishment of permanent fibre optic communication networks across the site.

Sandfire remains on target to achieve its key project milestones of:

- First direct shipping ore (DSO) mined from the open pit – Q1 CY 2012, shipment Q2 CY 2012;
- First underground ore on the ROM stockpile – Q1 CY 2012;
- First ore in the SAG mill – Q3 CY 2012.

Other key milestones for the Quarter included the completion of two product sales agreements with international trading company MRI Trading AG and Yunnan Copper Corporation Ltd. These comprehensive off-take arrangements cover 100 per cent of the high-grade Direct Shipping Ore (DSO) to be produced from the open pit during 2012 and early 2013 and build on the strong relationships and strategic partnerships Sandfire already has in place globally.

During the Quarter, Sandfire completed the first \$190 million draw-down of funding under the \$390 million project financing facility (Facility B) for the DeGrussa Project. Final documentation for this facility, which is the main facility for construction and development, was executed in late September, clearing the way for the first draw-down to occur following satisfaction of conditions precedent.

## 2.0 CONSTRUCTION & DEVELOPMENT

Construction and development activities continued at the DeGrussa Project during the Quarter, with the overall project now over 60 per cent complete and total expenditure to the end of the Quarter of \$194 million, in line with budget.

### 2.1 Construction Progress

Further significant progress was achieved during the Quarter towards construction of the DeGrussa Project, with the status of key items outlined below:

- The installation of the 400-room Permanent Mine Village is complete bringing the total rooms to 600, with installation of landscaping and facilities now underway.

- The Next G mobile phone service was commissioned and fibre optic communications have been installed and are fully operational across site.
- The DeGrussa Aerodrome is well advanced, with earthworks completed and the aerodrome on schedule to be operational in February.
- Construction of the Tailings Storage Facility is underway, with contractor Watpac well advanced in the placement of clay material on the embankments and floor, which should allow early mobilisation to install the HDPE liner.
- Installation of infrastructure is progressing well, with all office buildings now in place and operational. The power station is expected to be commissioned in February and construction of the workshop and warehouse facilities is well advanced.
- Construction of the sealed access road to the Great Northern Highway is nearing completion, with final finishing now underway.
- Construction of the process plant is well underway, with major concrete foundations for the SAG mill, ball mill and crushed ore bin completed. Concrete foundations for the crusher pocket, thickeners, concentrate shed and filter are nearing completion with over 70 per cent of all concrete has now been placed. Plant construction is expected to take approximately 12 weeks, with practical completion and commissioning scheduled for Q3 of CY 2012.
- Manufacture of all major long-lead items is complete with all overseas items now in transit or in Perth. Locally manufactured items are being progressively delivered to site.
- The contracts for underground diamond drilling and laboratory management have been awarded, with both contractors mobilising to site in January 2012.
- The Port Hedland Port Authority has confirmed its intention to lease a parcel of land to Sandfire in close proximity to common user berths 1 and 2 to

accommodate exports of DeGrussa product. A lease agreement is now being finalised, with a preliminary design for a container storage facility and baseline environmental surveys completed.

### 3.0 OPERATIONS AND MINING

Mining continued in the DeGrussa Stage 1 open pit and in the “Evans Decline” during the Quarter, with excellent progress being achieved.



#### 3.1 Open Pit Mining & Ore Production

At the end of the December Quarter, a total of 4.8Mbcm had been excavated from the Stage 1 open pit, with the Company on track to mine first chalcocite DSO by March 2012.

#### 3.2 Underground Mining

Underground mine development is proceeding well, with the Evans Decline advanced to over 1,000m from the portal.

First underground sulphide ore is expected to be intersected in Q1 of CY2012.

### 4.0 OFF-TAKE AGREEMENTS

During the Quarter Sandfire secured sales contracts covering 100 per cent of the Direct Shipping Ore (DSO) to be produced from the DeGrussa Project, on commercial terms in line with normal concentrate agreements.

The first off-take agreement was signed on 4 November 2011 with international trading company MRI Trading AG (MRI) to purchase 50 per cent of DSO production, up to a maximum of 75,000 dry metric tonnes (dmt), for a 1-year period. MRI will purchase the DSO on a CIF

(Cost, Insurance and Freight) basis with the remaining commercial terms of the contract being confidential.

A second agreement was signed with Yunnan Copper Corporation Ltd on 15 December 2011 for the remaining 50 per cent of DSO production. This contract is for the purchase of a minimum of 70,000dmt of DSO between April 2012 and March 2013. Yunnan Copper will purchase the DSO on a CIF basis with the remaining commercial terms of the contract being confidential. The first shipment under these contracts is scheduled for Q2 of CY2012.

Discussions are continuing with several parties regarding the sale of concentrate from the underground operation, with sales agreements to be concluded in 2012.

## 5.0 FEASIBILITY STUDIES & METALLURGY

### 5.1 Copper oxide

Metallurgical testwork conducted during the December Quarter focused primarily on the copper oxide material, with the scrubber testing of composite producing favourable results.

These samples retained 10-30% of the original mass, however the scrubbed material still contained an amount of kaolinite which has proved problematic in earlier testing.

Flotation testing conducted confirmed the scrubbing work resulted in very good rejection of clays and other deleterious materials with minimal loss of copper, however the subsequent flotation of the scrubbed product still required de-sliming due to the remaining clay in the scrubbed product.



Four composite samples of oxide material have been sent for pilot scale testing with results expected Q1 CY 2012.

The objective of the testing program is to convert oxide resources to Ore Reserves to allow inclusion of the associated revenue streams into the financial model, additional to the revenue estimates of the DFS.

Massive sulphide metallurgical testing also continued during the Quarter, with exceptional results achieved using Guar Gum in preference to CMC. Concentrate grades have improved with no loss in recovery. The design of the CMC system installed in the process plant is fit for either CMC or Guar.



## 6.0 EXPLORATION

### 6.1 DeGrussa / Doolgunna Project

Sandfire has an annual exploration commitment of \$20 million, predominantly for the Doolgunna Project, aimed at exploring for potential repeats of the DeGrussa Volcanogenic Massive Sulphide (VMS) mineralised system.

As part of ongoing regional drilling to test priority copper and gold anomalies within the Doolgunna Project, drilling at the DGAC1042 gold anomaly, located 11km south-west of DeGrussa, continued during the December Quarter and returned further significant widths and grades of gold mineralisation.

Significant results received to date from this drilling include (see Appendix 3 for drill-hole collar locations):

- **8m @ 5.97g/t Au** from 91m (DGRC560)
- **4m @ 7.21g/t Au** from 146m (DGRC563)
- **6m @ 6.35g/t Au** from 156m (DGRC563)
  - Including 1m @ 30.00g/t Au

- **9m @ 6.90g/t Au** from 89m (DGRC574)
  - *Including 1m @ 28.70g/t Au*
- **4m @ 7.46g/t Au** from 127m (DGRC575)
  - *Including 1m @ 26.30g/t Au*

The mineralisation is hosted by silicified fine grained sediments with minor sulphides and quartz carbonate veining. Structural overprinting was also evident.

Interpretation, preliminary modelling and initial economic analysis of the anomaly will be conducted in Q1 of CY2012, with further drilling to be conducted subject to the results of this review.

## 6.2 Borroloola Project

*The Borroloola Project comprises a total area of 10,000+ square kilometres of tenements and tenements under application in the Northern Territory. The tenements are located near McArthur River, the second largest SEDEX base metal deposit in the world with a primary resource of approximately 230 million tonnes at a grade of + 13% combined lead and zinc.*

*Sandfire's tenements cover a strike length of approximately 100km of the Emu Fault Zone, which is the controlling structure of the McArthur River deposit. The Borroloola tenements are also prospective for sedimentary manganese mineralisation, similar to the world-class Groote Eylandt manganese deposits in the Gulf of Carpentaria, uranium and iron ore.*

The Borroloola exploration programs for the Quarter included drilling at Rosie Creek, Tawallah One and Yiyintyi prospects, as well as airborne geophysical surveys on the Yiyintyi and Bing Bong areas.

### Lead-zinc Exploration

Diamond drilling continued along the Emu Fault zone in the vicinity of Rosie Creek, targeting McArthur River-style lead and zinc mineralisation under 30-50m of sand cover. Drilling identified minor disseminated pyrite (2-10%) with associated anomalous base metals in black shale units, but no significant results have been returned. The results of this Program are being assessed and will guide the planned 2012 field program.

### Copper Exploration

RC drilling to the west of the Tawallah One copper anomaly (greater than 1,000ppm Cu)

returned best intercepts of 16m at 1700ppm Cu (11BLRC0134, from 84m, in dolomitic siltstones) including 4m at 3900ppm Cu (from 92m), and 16m at 1500ppm Cu (11BLRC0136, from 40m) in weathered siltstone. The Tawallah One copper mineralisation consists of malachite 'blebs' in a host sequence of dolomitic siltstone. No primary sulphide source has been identified and further work will focus on drill core samples of the copper mineralisation.

### Uranium Exploration

RC drilling focused on the Yiyintyi East uranium target. Drilling intersected a thick quartzite unit, the basal clastic of the McArthur Basin, without recording significant results. The results of a detailed airborne magnetic and coincident helicopter EM survey over the Yiyintyi East and West targets are awaited.

## 6.3 Yannarie Project

*The Yannarie Project is located 250km northeast of Carnarvon on the west coast of eastern Australia.*

A deep drilling program to test the coincident lead and zinc geochemical and IP resistivity anomalies was completed during the quarter. There were no significant results from the RC phase of drilling and the diamond core samples are being processed, although no mineralisation was identified.

## 6.6 Urandy Project

*The Urandy Project is located in the West Pilbara region some 80km southeast of the coastal town of Onslow. The property is prospective for gold and base metals, hosted in the Paleoproterozoic Ashburton Formation.*

A field reconnaissance trip was completed during the quarter without identifying any causal surface feature to explain the shallow IP anomalies previously identified.

## 7.0 CORPORATE

### 7.1 Project Finance Facilities

On 29 September 2011, the Company announced that it had executed final documentation for a \$390 million fully underwritten and secured project financing facility (Facility B). Facility B is the main facility for construction and development of the Company's DeGrussa Project.

Sandfire completed its first draw-down of funding from Facility B on 10 November 2011, drawing down a total of \$190 million, with funds to be used for the following purposes:

- \$122 million to fund estimated project development and construction costs at DeGrussa into Q1 2012;
- \$60 million to repay the funds drawn down under the initial \$75 million mine development facility (Facility A). Facility A has subsequently been closed; and
- \$8 million to fund the establishment of debt service reserve accounts and transaction costs.

## 7.2 Cash Position and Security

Sandfire's cash position at the end of the December Quarter was \$97 million, with further funding drawdowns planned for February 2012.

The finance facilities are secured by a fixed and floating charge over the assets of the Company, including the DeGrussa Project and the broader Doolgunna Project, and a mining mortgage over the Project tenements.

## 7.3 Farm-in to Kennedy Highway Project

During the Quarter, Sandfire entered into an agreement with Global Resources Corporation Limited (ASX: GRM) under which Sandfire has the right to earn up to an 80% interest in the Kennedy Highway Project, in north Queensland.

The Kennedy Highway Project is a single tenement, EPM15948, located approximately 230km south of Cloncurry in North Queensland. Exploration will target a potential Broken Hill base metal type geophysical target, under cover approximately 100km south of the Cannington mine.

Under the terms of the Agreement:

- Sandfire must spend a minimum of A\$400,000 in the first year on the Project, of

which no less than half must be spent on drilling;

- Sandfire may withdraw without liability at any time after it has met this minimum expenditure;
- Sandfire must spend a minimum of A\$3M (in total), in the first 3 years to earn 60% equity (Minimum Interest) in the Project, no less than half of which must be spent on drilling;
- Sandfire has the option to spend a further A\$5M, over an additional 2 years, to earn 80% equity (Further Interest) in the Project; and
- After the Minimum Interest has been earned, and any time before the Further Interest has been earned, GRM and Sandfire will form an unincorporated Joint Venture (JV) to manage the Project.

Sandfire will be the manager of the JV and the partners will fund as per their respective ownership percentage, or be diluted.

## 7.4 Annual General Meeting

The Company's Annual General Meeting was held on 28 November 2011, with all resolutions passed on a show of hands.

### **KARL M. SIMICH MANAGING DIRECTOR AND CEO**

25 January 2012

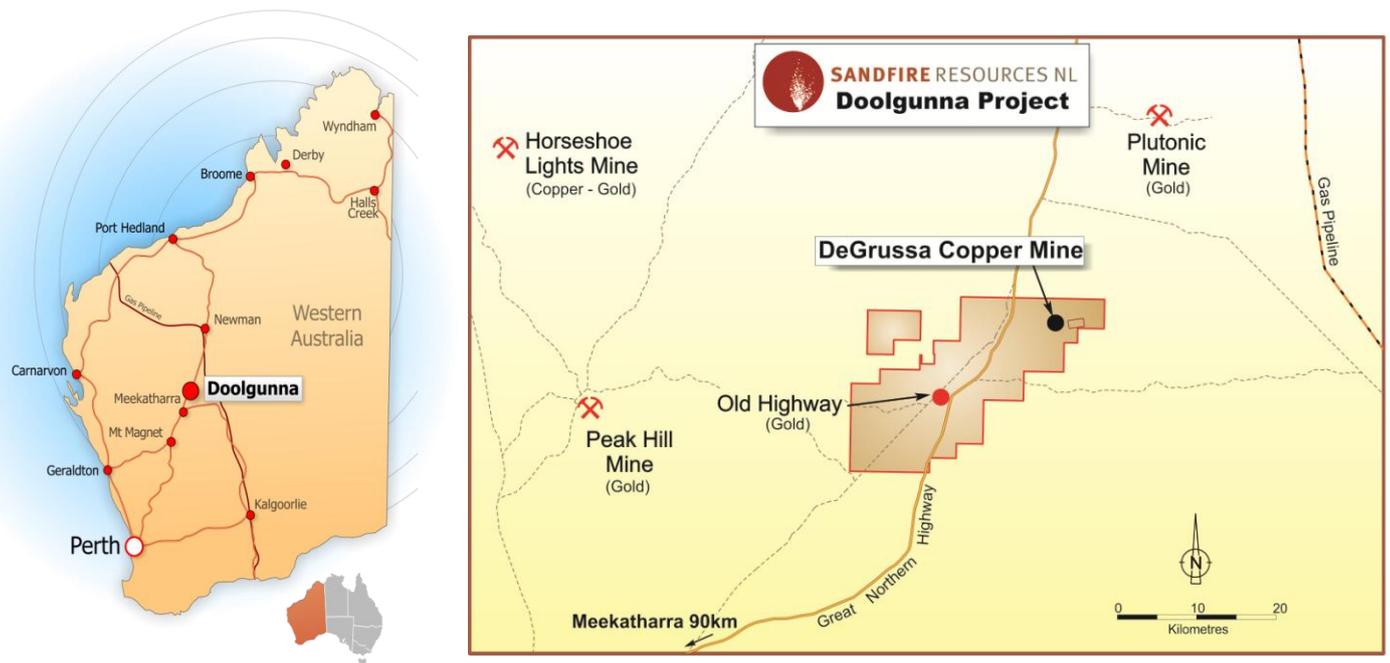
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**Figure 1 – DeGrussa Copper-Gold Project location**



**Appendix 1 – DeGrussa Copper-Gold Project – March 2011 JORC Resource Statement**

Zone	Resource Category	Tonnes (Mt)	Copper (%)	Gold (g/t)	Contained Copper (t)	Contained Gold (oz)	Competent Person
Gold Laterite	<i>Measured</i>	0.14	-	1.5	-	7,000	1
Copper	<i>Measured</i>	2.17	1.1	0.5	24,000	37,000	1
Oxides	<i>Indicated</i>	1.41	1.4	0.4	20,000	19,000	1
Supergene Chalcocite	<i>Indicated</i>	0.25	17.6	2.6	43,000	20,000	2
	<i>Inferred</i>	0.19	4.4	1.2	8,000	7,000	1
Primary Massive Sulphides	<i>Indicated</i>	7.80	5.8	2.0	456,000	502,000	1
	<i>Inferred</i>	2.32	4.3	2.0	100,000	149,000	1
<b>Total</b>		<b>14.33</b>	<b>4.6</b>	<b>1.6</b>	<b>652,000</b>	<b>742,000</b>	

Note: Refer to the Competent Person's Statements – Mineral Resources below.

- 1 Competent Person for these zones of resource was Diederik Speijers of McDonald Speijers
- 2 Competent Person for these zones of resource was David Slater of Coffey Mining

## Appendix 2 – DeGrussa Copper-Gold Project – March 2011 JORC Ore Reserve Statement

Deposit	Reserve Category	Mining Method	Tonnes (Mt)	Copper (%)	Gold (g/t)	Contained Copper (t)	Contained Gold (oz)
DeGrussa	Probable	Open Pit - DSO	0.14	25.6	2.5	37,000	12,000
DeGrussa/C1/Chalcocite	Probable	Open Pit	0.23	6.1	2.4	14,000	17,000
DeGrussa	Probable	Underground	1.50	6.6	1.9	99,000	90,000
Conductor 1	Probable	Underground	5.76	4.9	1.8	283,000	337,000
Conductor 4	Probable	Underground	0.76	4.4	1.2	33,000	30,000
<b>Total</b>	<i>Probable</i>		<b>8.39</b>	<b>5.6</b>	<b>1.8</b>	<b>465,000</b>	<b>485,000</b>

**Note 1** A cut-off grade of 8.5% Cu is applied on the Chalcocite to provide a targeted 26% Cu direct sale product (Achieved 25.6% Cu after dilution). All other material within the defined deposit boundaries has been included in the reporting of Ore Reserves with any sub-economic grade material being treated as internal diluents. These Ore Reserves include an overall assumption of 2.5% mining dilution at nil grade for all grade categories along with an assumed 2.5% mining loss of ore tonnes when mined. Calculations rounded to the nearest 10,000 tonnes; 0.1% Cu grade, 0.1 g/t Au grade; 1,000 tonnes Cu metal and 1,000 ounces Au metal. Errors of rounding may occur. These Ore Reserves occur within an open pit design containing 26Mt of total material, resulting in a waste to ore strip ratio of 70:1.

**Note 2** Mining recovery factor of 95% applied to diluted stoping blocks, with cut-off grade of 1.5% Cu and minimum stope size of 2,000t. Calculations rounded to the nearest 1,000t, 0.1%, 0.1g/t and 1,000 ounces; errors of rounding may occur.; assumes commodity prices of US\$7,673/t for copper and US\$1,300/oz for gold with a USD/AUD exchange rate of \$0.86; assumes 91% metallurgical recovery rate. Note: Refer to the Competent Person's Statement – Ore Reserves at the end of this release.

## Appendix 3 – Doolgunna Project – DGAC1042 Gold Anomaly, 2011 RC Drilling Collar Locations

Hole ID	Hole Depth (m)	Easting	Northing	RL	Azimuth	Dip
DGRC560	162	724,550	7,166,471	550	0	-60
DGRC563	174	724,450	7,166,400	550	0	-60
DGRC574	174	724,350	7,166,410	550	0	-60
DGRC575	192	724,350	7,166,377	550	0	-60

### **Competent Person's Statement – Mineral Resources**

The information in this report that relates to Mineral Resources (except the Indicated Resource of Supergene Chalcocite) is based on information compiled by Diederik Speijers who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Speijers is a permanent employee of McDonald Speijers and 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 2004 Edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Speijers 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 Statement – Mineral Resources**

The information in this report that relates to the Indicated Resource of Supergene Chalcocite is based on information compiled by David Slater who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Slater is a permanent employee of Coffey Mining and 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 2004 Edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Slater 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 Statement – Open Pit Ore Reserves**

The information in this report that relates to Open Pit Ore Reserves is based on information compiled by Quinton de Klerk of Cube Consulting, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr de Klerk has sufficient experience which is relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr de Klerk 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 Statement – Underground Ore Reserves**

The information in this report that relates to Underground Ore Reserves is based on information compiled by Shane McLeay of Entech Pty Ltd, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr McLeay 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 2004 Edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McLeay consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

### **Forward-Looking Statements**

Certain statements made during or in connection with this statement contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Reserves, exploration operations, project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management. Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in this statement and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in this statement or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly you should not place undue reliance on any forward looking statement.

### **Exploration and Resource Targets**

Any discussion in relation to the potential quantity and grade of Exploration Targets for the DeGrussa Project 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 resource inventory and it is uncertain if further exploration will result in the determination of additional JORC compliant Mineral Resources.