



ASX RELEASE

18 May 2009

---

## **NEW HIGH-GRADE GOLD AND COPPER DISCOVERY AT DEGRUSSA PROSPECT – DOOLGUNNA GOLD PROJECT (WA)**

---

### **HIGHLIGHTS**

- Significant high-grade copper and gold mineralisation intersected within and beneath previously delineated oxide gold zone.
- Large intervals of high-grade copper (Cu) with associated gold (Au), silver (Ag), zinc (Zn) and palladium (Pd) intersected in sulphide zone:
  - 47m @ 5.3% Cu, 20.1 g/t Ag and 1.0% Zn from 93m (DGRC105)
  - 22m @ 3.6% Cu, 3.8 g/t Au and 13.4 g/t Ag from 96m (DGRC101)
  - 18m @ 2.9% Cu, 13.0g/t Ag, 2.1% Zn, 1.0g/t Pd from 126m (DGRC101).
- Deeper RC drill holes in the sulphide zone terminated in mineralisation, indicating mineralisation extends at depth.
- Additional assay results awaited.
- Downhole EM surveys underway on completed drill holes with ground-based EM survey planned to define the potential scale of the body prior to further drilling.

For personal use only

Sandfire Resources NL (ASX: **SFR**) (**Sandfire**) is pleased to report that recent Reverse Circulation (RC) drilling has intersected significant intervals of **high-grade gold and copper mineralisation** at the **DeGrussa Prospect**, part of its 100 percent owned Doolgunna Gold Project in Western Australia.

The recent RC drilling campaign, comprising an initial 30 holes for 3,274 metres, was designed to test for extensions of a 220 metre long zone of previously discovered oxide gold mineralisation.

The drilling has been successful in intersecting gold mineralisation within the oxide zone. In addition, several vertical RC drill holes towards the end of the campaign returned **significant high-grade copper intersections** from within an interpreted steeply-dipping massive sulphide body.

Intersections within the oxide zone included:

- **DGRC083** 19m @ 4.2 g/t Au and 19.0 g/t Ag from 40m including 12m @ 6.2g/t Au and 23 g/t Ag from 40m;
- **DGRC104** 23m @ 2.4% Cu and 3.1g/t Ag from 66m including 10m @ 2.6% Cu and 8m @ 3.4% Cu
- **DGRC102** 11m @ 5.3 g/t Au and 9.8 g/t Ag from 46m  
6m @ 7.6 g/t Ag from 60m and  
7m @ 4.3% Cu from 66m;
- **DGRC105** 17m @ 4.1 g/t Au and 8.4g/t Ag from 53m and  
15m @ 3.1% Cu, 3.0g/t Au and 9.7g/t Ag from 72m;
- **DGRC103** 7m @ 3.0% Cu from 63m.

Intersections within the sulphide zone included:

- **DGRC105** 47m @ 5.3% Cu, 20.1 g/t Ag and 1.0% Zn from 93m including 26m @ 5.5% Cu, 23.2g/t Ag, 1.6% Zn and 1.5 g/t Pd;
- **DGRC101** 22m @ 3.6% Cu, 3.8 g/t Au and 13.4 g/t Ag from 96m including 5m @ 17.4 g/t Au from 115m;  
18m @ 2.9% Cu, 13.0g/t Ag, 2.1% Zn, 1.0g/t Pd from 126m including 5m @ 4.8% Cu, 18.9 g/t Ag and 2.0% Zn and 10m @ 2.7% Cu, 12.8 g/t Ag and 2.6% Zn.

For personal use only

Significantly, the two drill holes intersecting the massive sulphide zone **terminated in mineralisation** indicating that the sulphide body extends at depth.

Results from the balance of the drill holes are still awaited and will be reported to the market as soon as they come to hand. Geological logging of several of these holes has returned visually encouraging results, including the presence of visible chalcopyrite in massive sulphides.

While exploration is still at a relatively early stage at the DeGrussa Prospect, the directors of Sandfire are very encouraged by these results given the intervals and grades of mineralisation intersected.

Oxide gold mineralisation at DeGrussa is, in part, believed to be a residual leached capping of a deeper gold and copper-rich sulphide system.

The Doolgunna Project is located in the Meekatharra region, some 900 kilometres north of Perth. Sandfire has previously discovered several oxide gold prospects at the Project, which is located near current and previously mined gold deposits such as Plutonic, Fortnum, Peak Hill, Harmony and Harbour Lights.

The discovery of high-grade copper and gold mineralisation in association with other elements including zinc, silver and palladium represents a potentially significant new development for the Project and the region.

In order to assist in planning the next stage of exploration, Sandfire has commenced a down-hole Electro-Magnetic (**EM**) survey on seven of the completed drill holes at DeGrussa. A ground-based EM survey will also be undertaken over the mineralisation to further define the potential size of the mineralised zone and to assist with ongoing drill targeting.

This will be followed by a targeted diamond core drilling program based on the results of the EM surveys.

The Company also intends to conduct an airborne EM survey over the entire DeGrussa Prospect stratigraphy to locate other potential zones of mineralisation.

Sandfire will re-evaluate the broader potential of the Doolgunna Project area after reviewing the results of this survey and receiving outstanding assay results from the recent RC drilling.

All assay results have been provided to the Company by the Perth Assay Laboratory of the Kalassay Group.

The Company looks forward to progressively releasing further results as they come to hand.

**- ENDS -**

For personal use only

**W JOHN EVANS**

Technical Director  
AUSIMM Competent Person

Competent Person's Statement

The information in this report that relates to Exploration Results is based on information compiled by John Evans who is a Fellow of the Australasian Institute of Mining and Metallurgy. John Evans 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. John Evans consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**For further information, please contact:**

Karl Simich – Executive Director:  
Mobile: +61 418 916 945  
Nicholas Read – Read Corporate:  
Mobile: +61 419 929 046

For personal use only

**TABLE 1**  
**DeGRUSSA PROSPECT RC DRILLING RESULTS MAY 2009**

Hole Number		Depth (m)	Co-Ordinates		Intersection			Mineralisation					Comments
DGRC	Inclination		Easting GDA	Northing GDA	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)	Ag (g/t)	Zn (%)	Pd (g/t)	
83	060° to N	60	733900	7173109	<b>40</b>	<b>59</b>	<b>19</b>	-	<b>4.2</b>	<b>19.0</b>	-	-	Gold and silver mineralisation within the oxide zone <b>Mineralisation open at depth</b>
					40	52	12	-	6.2	23.0	-	-	
101	Vertical	144	733900	7173115	<b>96</b>	<b>118</b>	<b>22</b>	<b>3.6</b>	<b>3.8</b>	<b>13.4</b>	-	-	Visible fine grained copper sulphide mineralisation
					115	120	5	-	17.4	-	-		
					<b>126</b>	<b>144</b>	<b>18</b>	<b>2.9</b>	-	<b>13.0</b>	<b>2.1</b>	<b>1.0</b>	Visible fine grained sulphide mineralisation <b>Mineralisation open at depth</b>
					126	131	5	4.8	-	18.9	2.0	-	
134	144	10	2.7	-	12.8	2.6	-						
102	Vertical	100	733900	7173150	<b>46</b>	<b>57</b>	<b>11</b>	-	<b>5.3</b>	<b>9.8</b>	-	-	Visible native copper within the oxide zone
					<b>60</b>	<b>66</b>	<b>6</b>	-	-	<b>7.6</b>	-	-	
					<b>66</b>	<b>73</b>	<b>7</b>	<b>4.3</b>	-	-	-	-	
103	Vertical	150	733880	7173160	<b>47</b>	<b>55</b>	<b>8</b>	-	<b>0.5</b>	<b>3.7</b>	-	-	Mineralisation within the oxide zone Visible native copper within the oxide zone
					<b>63</b>	<b>70</b>	<b>7</b>	<b>3.0</b>	-	-	-	-	
					62	66	4	-	-	3.1	-	-	
104	Vertical	240	733880	7173140	<b>66</b>	<b>89</b>	<b>23</b>	<b>2.4</b>	-	<b>3.1</b>	-	-	Visible native copper within the oxide zone, awaiting results for 120-240m (sulphide mineralisation)
					67	77	10	2.6	-	-	-	-	
					66	79	13	-	-	4.9	-	-	
					81	89	8	3.4	-	-	-	-	
105	Vertical	140	733880	7173120	<b>53</b>	<b>70</b>	<b>17</b>	<b>0.4</b>	<b>4.1</b>	<b>8.4</b>	-	-	Mineralisation within the oxide zone Visible native copper within the oxide zone
					<b>72</b>	<b>87</b>	<b>15</b>	<b>3.1</b>	<b>3.0</b>	<b>9.7</b>	-	-	
					<b>93</b>	<b>140</b>	<b>47</b>	<b>5.3</b>	-	<b>20.1</b>	<b>1.0</b>	-	Visible fine grained sulphide mineralisation <b>Mineralisation open at depth</b>
114	140	26	5.5	-	23.2	1.6	1.5						

For personal use only

For personal use only

