



ASX RELEASE

19 July 2009

27% COPPER INTERSECTED OVER 8 METRES AT DOOLGUNNA

HIGHLIGHTS

- First diamond drill hole at Doolgunna Project returns **spectacular high grade copper-gold results** over the first 8 metres assayed:

DGDD-001: **8m averaging 27.3% Copper (Cu), 1.9g/t Gold (Au) and 34.9g/t Silver (Ag) from 146m**

- Assay results from this first intersection (Intersection 1) confirm field reports of abundant visible chalcopyrite, with individual 1 metre intersections including:

• 550002	0.9m@	32.0% Cu
• 550003	1m @	31.3% Cu
• 550004	1m @	30.2% Cu
• 550005	1m @	25.6% Cu
• 550006	1m @	20.8% Cu
• 550008	1m @	24.2% Cu
• 550009	1m @	28.7% Cu
• 550010	1m @	26.1% Cu



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- Assays awaited for balance of Intersection 1 (3m) and Intersection 2 (31m) – DeGrussa zone – plus Intersections 3 (6m) and 4 (18.5m) – Conductor 1 zone.

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Sandfire Resources NL (ASX: **SFR**; **Sandfire**) is very pleased to report **outstanding high-grade assay results** from the first diamond core hole, DGDD-001, completed at its 100%-owned Doolgunna Project in Western Australia.

Results have been received from the assay laboratory so far **for the first 8 metres** of the previously reported Intersection 1 (11m down hole from 146m to 157m). **The first 8 metres averaged 27.3% copper, 1.94g/t gold and 34.87g/t silver** – by far the highest grade assays recorded to date at Doolgunna.

Samples from the first eight metres included some remarkable individual 1 metre samples featuring grades of **32.0% Cu, 31.3% Cu, 30.2% Cu, 25.6% Cu, 20.8% Cu, 24.2% Cu** and **28.7% Cu**. Table 1 attached shows all samples received to date and includes details of the assay method.

DGDD001 was located at 7173000mN, 733800mE, approximately 200 metres south-east of RC hole DGRC 117 (which intersected 32m @ 2.9% Cu, 1.29g/t Au and 6.8g/t Ag from 294m). This was the first hole in an aggressive step-out program of diamond core drilling designed to test the overall scale and dimensions of the high-grade copper-gold mineralization discovered at Conductor 1 and DeGrussa.

Hole DGDD001, like all of the current diamond drill holes, was inclined at 60 degrees to the north. The hole was designed to intersect the Conductor 1 mineralisation, which is interpreted to dip at 64 degrees to the south.

Assay results for the remaining 3 metres of Intersection 1, which is interpreted to be an extension of the DeGrussa mineralisation, (see ASX Announcements – 8 July and 14 July), are expected to be received progressively over the next two weeks, together with results for Intersections 2, 3 and 4, as summarised below:

- **Intersection 1** – from 154m to 157m (the last 3m of Intersection 1): **DeGrussa zone**
- **Intersection 2** – which was recorded from 176m to 207m (31 metres down hole): **DeGrussa zone**
- **Intersection 3** – comprising partial (not massive) sulphide mineralization which was recorded from 318.9m to 324.9m (6 metres): **Conductor 1**
- **Intersection 4** – which was recorded from 337.8m to 356.3m (18.5 metres downhole): **Conductor 1**

The Company previously reported that there was abundant chalcopyrite, a copper sulphide mineral, in Intersections 1 and 2, based on the visual assessments of its experienced field geologists.

The remarkable high-grade assay results received for Intersection 1 confirm these visual estimates and provide further strong evidence of the high grade and tenor of the mineralisation discovered at DeGrussa and Conductor 1.

The results also provide an opportunity for Sandfire to confirm the efficacy and accurately calibrate a recently acquired portable XRF analyser Niton model

XL3T. Preliminary results based on testing of the Niton machine with Intersection 1 suggest that it can provide accurate grade range estimate for drill core from the Doolgunna Project. Sandfire will continue calibrating the instrument using mineralisation for which accurate assay values are known before considering possible reporting of field XRF assay results.

Drilling Update

Sandfire has now completed diamond drill hole DGDD-002, which was located at 733840mE and 7172880mN, 120 metres south of DGDD-001. This hole, which was inclined at 60 degrees to the north, was completed at 549.9 metres down hole without intersecting sulphide mineralisation.

Geological inspection of the core indicates that the hole intersected thick sequences of intrusive dolerite as well as a gabbroic intrusion from 339.3m to 549.9m, which may explain the absence of sulphide mineralisation.

Hole DGDD-002 has been cased in preparation for down hole EM surveying to assist in determining the relationship between this intrusion and the sulphide mineralisation. Dolerite and gabbro intrusions are not uncommon within volcanogenic massive sulphide (VMS) systems.

Drilling of the third diamond drill hole, DGDD-003, commenced late last week at 733960mE and 7172920mN, inclined at 60 degrees to the north.

Doolgunna Project – Background

The Doolgunna Project is located approximately 130km north of Meekatharra (900km north of Perth) in Western Australia close to a number of existing and historical gold mines and infrastructure including the Goldfields Gas Pipeline and Great Northern Highway.

Sandfire has so far discovered two zones of high-grade sulphide mineralisation at DeGrussa and Conductor 1 in the north-eastern portion of the Doolgunna tenements. These discoveries appear to comprise volcanogenic massive sulphide (VMS) style mineralisation located beneath an oxide copper-gold zone.

Conductor 1 lies approximately 160 metres to the north-west of DeGrussa and comprises a large body of sulphide mineralisation dipping in a southerly direction. Diamond drilling, which commenced on Saturday, July 4, 2009, is aimed at testing the extent of the mineralisation to the south. The results of this diamond drilling program will determine the next steps in the exploration of Conductor 1 and DeGrussa.

- ENDS -

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.

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Table 1: Intersection 1 – Down-hole Sample Results

Sample No.	From (m)	To (m)	Interval (m)	Copper (%)	Gold (g/t)	Silver (g/t)
550002	146.1	147	0.9	32.02	1.45	35.85
550003	147	148	1.0	31.29	1.20	37.76
550004	148	149	1.0	30.20	2.22	37.53
550005	149	150	1.0	25.57	1.29	36.25
550006	150	151	1.0	20.84	1.43	27.39
550008	151	152	1.0	24.18	1.41	31.32
550009	152	153	1.0	28.72	2.70	42.50
550010	153	154	1.0	26.11	3.78	30.37

Note: Diamond drill core from Doolgunna is dispatched to the Perth Assay Laboratory Kalassay Group for independent analysis using industry standard chemical analysis methods.