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**ASX ANNOUNCEMENT / MEDIA RELEASE** 

## SUGARLOAF METALLURGICAL DIAMOND DRILL HOLE RESULTS

#### HIGHLIGHTS

- Results for the two metallurgical diamond drill holes from the Sugarloaf graphite deposit have been received and included:
  - 29.5m @ 11.0%TGC from 19m in hole SLDD12\_001
  - 9.5m @ 15.4%TGC from 24.5m in hole SLDD12\_002 including 6m @ 20.4%TGC from 28m.
- The metallurgical drill core has been relocated to Archer's new metallurgical workshop located at Lonsdale in Adelaide awaiting metallurgical test work.
- Previous geophysical surveys and drilling at Sugarloaf has identified a large graphite anomaly.

#### SUGARLOAF GRAPHITE DEPOSIT

Archer Exploration Limited (ASX: "AXE") advises that assay results for the two recently completed metallurgical diamond drill holes have been received. The Sugarloaf graphite deposit is located on Carappee Hill EL (3711) near Darke Peak on Eyre Peninsula, South Australia (Sugarloaf is circled in Figure 1 below) and is situated 10km northwest of the Company's Campoona Graphite Project.

Prior to Archer Exploration Limited acquiring the tenement, drilling had recorded numerous intercepts of graphite. As graphite was not a focus, the intervals were never assayed for carbon.

The Company first drilled extensions to Sugarloaf Hill in 2008 to target a co-incident gold-copper anomaly. The drilling north of Sugarloaf Hill recorded abundant graphite but as graphite was not the target, no further action was taken. Anomalous gold was recorded (3m @ 1.0ppm Au).

In 2010 the Company revisited Sugarloaf following substantial increases in the market price for graphite. Archer reviewed the historic drill logs of previous explorers in the area noting that graphitic intervals were recorded in 23 of the 41 historic holes drilled on and around Sugarloaf Hill. Geological logs from these historic drill holes recorded intervals of graphite varying from 4 metres to 61 metres. The locations of the holes indicated the potential for significant graphite over a strike length of at least 2 kilometres.



Figure 1. Archer's Cleve Uplands graphite deposits and prospects

Since 2012 the Company's main focus has been the definition of a JORC Resource at a Campoona Shaft which the Company hopes to announce in December 2012. Despite the focus on Campoona Archer has continued to appraise Sugarloaf and several other graphite targets that occur in the immediate vicinity. Collectively Archer's has a 918km<sup>2</sup> footprint in the emerging Cleve graphite province.

Sugarloaf, Campoona Shaft and Campoona Central are in close proximity to each other. The style and tenor of the graphite mineralisation, the proximity to infrastructure and the favourable jurisdiction gives the Company confidence to continue the development of these projects.

## **Exploration Target**

Archer has previously reported wide intercepts of highly graphitic schist at Sugarloaf. Drilling in April 2011 supported an exploration target of highly graphitic schist of 24-37Mt\*at 10-12%TGC for the western graphite horizon.

Due to the paucity of assay results Archer was reluctant to ascribe a grade range for the graphitic schist. The April 2011 drilling when combined with the 4 holes assayed in 2009 was considered sufficient in terms of assayed intervals to enable an indicative estimate of grade for the exploration target of 10.9% Total Carbon (sample size n=319). The expected grade bounds for the graphite were estimated at between 10-12% Total Carbon.

Drilling in 2012 intersected widespread graphite in what is termed the eastern graphite horizon representing the eastern limb of a broad anticline. Based on this drilling the exploration target has been revised to 40-70Mt\* at 10-12%TGC.

\*The potential quantities and grades presented are conceptual in nature, there has been insufficient exploration to define an overall Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource

### **Metallurgical Diamond Drilling**

A graphite concentrate grade of 82%TGC has been achieved using conventional flotation techniques and standard reagents based on RC drilling.

The Company considered that better quality samples were needed to further metallurgical characterisation of Sugarloaf. Two shallow holes were drilled at Sugarloaf Hill during September 2012 to recover core material for metallurgical test work to determine the processing options to recover graphitic products. The two holes were drilled close to historic mine shafts (circa 1915) on Sugarloaf Hill. The holes (SLDD12\_001 and SLDD12\_002) were drilled to intersect both weathered and intermediate material for product recovery.



Plate 1. Diamond drilling at Sugarloaf Hill

Diamond Hole ID	From (m)	To (m)	Interval (m)	Assay TGC	Lithology
SLDD12_001	0	6	6	9.3%	
and	19	48.5	29.5	11.0%	Soft porous graphite to EOH
SLDD12_002	0	18	18	5.9%	
and	24.5	34	9.5	15.4%	
incl	28	34	6	20.4%	Terminated in graphite

Significant Sugarloaf diamond drill assays include:

### SLDD12\_001

SLDD12\_001 was collared 10m north of the Eastern shaft and intersected completely oxidised graphite as mined in the adjacent shaft. The graphite zone from 19m down hole is a second graphite horizon. The hole was abandoned at 48.5m due to circulation losses attributable to the highly weathered nature of the graphite body.



Plate 2. SLDD12-001 core from surface to 4.9m, averaging 9.2%TGC.



Plate 3. SLDD12-001 core from 35 to 38.3m, averaging 14.1%TGC.

# SLDD12\_002

SLDD12\_002 was drilled to intersect graphite exposed at the surface of the Eastern Shaft and to intersect the graphite seen in the Western shaft material at depth. The final 6m of SLDD12\_002 reported over 20%TGC in line with grades recorded from the shafts. Drilling was stopped because sufficient sample had been collected for the metallurgical test work.



Plate 4. SLDD12\_002 oxidised graphite representing the Eastern shaft, averaging 20.9%TGC

The core has been relocated to Adelaide to be processed following completion of the Campoona Shaft metallurgy.

For further information please contact:

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The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr. Wade Bollenhagen, Exploration Manager of Archer Exploration Limited. Mr. Bollenhagen is a Member of the Australasian Institute of Mining and Metallurgy who has more than eighteen years experience in the field of activity being reported. Mr Bollenhagen has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" relating to the reporting of Exploration Results. Mr. Bollenhagen consents to the inclusion in the report of matters based on his information in the form and context in which it appears.