



## OUTSTANDING TEST RESULTS CONFIRM HIGH PROPORTION OF JUMBO AND LARGE FLAKE GRAPHITE

*Tests point to strong economics for Ardiden's Manitouwadge Graphite project in Ontario, Canada, with up to 80% of graphite classified as premium-priced jumbo and large flake size*

ASX: ADV

**Capital structure:**

Ordinary shares  
433.5m

Options (Unlisted)  
68.5m (various)

**Shareholders:**

Institutional 13%  
Board/Mgt 19%  
Retail 68%

Top 20: 56%

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- **Successful metallurgical beneficiation testwork confirms a very high proportion of jumbo and large flake graphite is present and that a high grade concentrate can be produced via flotation and gravity concentration methods.**
- **Results show that up to 80% of the graphite is jumbo flake (>300 microns) and large flake (180-300 microns) in size.**
- **The jumbo and large flake graphite was able to be beneficiated up to Total Graphitic Carbon (TGC) grades of 95.6% and 93.7% respectively with simple, low-cost gravity and flotation methods.**
- **Jumbo and large flake graphite yields a significant price premium over medium and fine flake graphite and is expected to be in high demand for use in new technologies such as lithium-ion batteries, electric vehicles and battery storage for business and home usage (eg. Tesla's recent launch of Powerpack and Powerwall systems in North America)**
- **Beneficiated graphite samples will now be provided to potential customers and used for further testwork on its graphite and graphene properties.**

Ardiden Limited (ASX: ADV) is pleased to advise that it has received extremely encouraging metallurgical beneficiation test results from its 100 per cent-owned Manitouwadge Jumbo Flake Graphite project in Ontario, Canada.

The metallurgical test work was undertaken by Actlabs in Thunder Bay, Ontario on two of the drill core samples from the March 2015 drill program.

The results indicate that the project contains up to 80% jumbo and large flake graphite using a refined beneficiation process compared to previous reported testing on surface samples (ASX announcement 7 October, 2014).

The testing also confirmed that simple, low cost gravity and flotation beneficiation achieved TGC grades of up to 95.6% (jumbo flake) and up to 93.7% (large flake).

The flake size distribution places the Manitouwadge project at the top end of global graphite projects. The confirmation of the presence of high-value jumbo and large flake graphite that can be beneficiated with low cost gravity and

flotation indicates the project has potential for a shallow surface mining operation extracting high-value graphite products.

A summary of the beneficiation results for all samples is set out tables 1 to 2 below:

Size	% Mass Recovery	Graphitic Grade (%TGC)
<b>Jumbo (+300µm)</b>	30.35%	95.6%
<b>Large (+180µm)</b>	50.41%	93.6%
<b>Medium (+150µm)</b>	5.92%	92.6%
<b>Fine (-150µm)</b>	13.32%	92.4%

Table 1: Flake size distribution from sample 1390492 having an overall grade of 3.69% TGC.

Size	% Mass Recovery	Graphitic Grade (%TGC)
<b>Jumbo (+300µm)</b>	41.92%	94.9%
<b>Large (+180µm)</b>	16.55%	93.7%
<b>Medium (+150µm)</b>	9.51%	90.7%
<b>Fine (-150µm)</b>	32.02%	88.8%

Table 2: Flake size distribution from sample 1390037 having an overall grade of 7.81% TGC.

Jumbo and large flake graphite is expected to be in strong demand in coming years due to increased demand arising from its use in new technologies such as lithium ion batteries, electric vehicles and business and home battery storage systems where graphite is used as the battery anode. Projected pricing for jumbo flake graphite from industrial minerals experts, Stormcrow Capital, is shown in Table 3 below:

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Jumbo</b>	3365	2135	1577	1726	1884	1676	1555	2596	3573	6175
<b>Large</b>	2514	1595	1178	1192	976	996	684	811	947	1165
<b>Medium</b>	2138	1514	1025	991	959	867	521	500	508	517
<b>Small</b>	1375	1089	855	874	806	784	476	481	487	493
<b>Very Fine</b>	930	689	505	524	509	493	342	347	353	359

Table 3: USD/ tonne forecasts by flake size from industrial minerals experts, Stormcrow Capital, "Industry Report: Graphite – A Stress Test on Future Graphite Pricing", June 2014

A recent example of the potential pent up demand for lithium-ion electricity storage products is illustrated by the launch of Tesla's Powerpack (business electricity storage) and Powerwall (home electricity storage) products in April 2015. Tesla took US\$800m<sup>1</sup> of orders in the first week after these new products were announced. These batteries will be produced at the \$5bn Tesla gigafactory being constructed in Reno, Nevada which is 2,500kms by rail from the Manitouwadge Jumbo Flake Graphite project.

Ardiden is currently preparing a bulk sample of graphite from its recent drilling program. Beneficiated graphite samples from this program will be provided to customers as samples and used for further testwork of its graphite and graphene properties. Further updates will be provided as information comes to hand.

Board of Directors  
Ardiden Limited

1. "Tesla's Battery Grabbed \$800 Million in its First Week", Bloomberg analysis of Tesla's March 2015 Quarter conference call, 8 May 2015

ENDS

### **About the Manitouwadge Project**

Located in an established mining province in Ontario, Canada, the Manitouwadge Jumbo Flake Graphite Project has been confirmed as an attractive near-term development opportunity following a highly successful recent diamond drilling program (see Ardiden ASX announcement of 14 April 2015, including JORC 2012 Table 1).

This drilling confirmed the presence of previously identified surface graphite at depth with grades comparable to other graphite deposits in Ontario being developed by TSX-listed companies such as Zenyatta Ventures and Northern Graphite.

Metallurgical testwork has indicated that up to 80% of the graphite is high value jumbo or large flake graphite. Testwork has also indicated that simple, low cost gravity and flotation beneficiation techniques can result in graphite purity levels of up to 95.6% for jumbo flake and 94% for large flake.

*The information in this report has been reviewed by Dr Dennis Arne who is a Registered Professional Geoscientist of the Australian Institute of Geoscientists, and a Professional Geoscientist registered in the province of British Columbia, Canada. Dr Arne is a Principal Consultant to CSA Global, has more than five years relevant exploration experience, and qualifies as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Arne consents to the inclusion of the information in this report in the form and context in which it appears.*

### **Forward-Looking Statement**

This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars (\$) and cents in this presentation are to Australian currency, unless otherwise stated. Investors should make and rely upon their own enquires and assessments before deciding to acquire or deal in the Company's securities.