

MEDIA/ASX RELEASE

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## **ALUMINA SUCCESSFULLY PRODUCED FROM AMMG'S 150 MILLION TONNE KAOLIN (ALUMINOUS CLAY) RESOURCE**

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### **HIGHLIGHTS**

- **Chinese technology holder successfully produces a trial 1.06 kilogram sample of metallurgical grade alumina in China via a laboratory scale process from AMMG kaolin sample.**
- **Technology holder in China successfully produces a trial 86 gram sample of 99.99% high purity alumina via a laboratory scale process.**
- **Verification of samples by Australian independent consultant expected by end of September, 2011.**
- **AMMG is currently carrying out a technical marketing study for a range of potential kaolin-based products, customers and joint venture partners in China, India, South-East Asia and the USA.**
- **The Company is continuing to explore other potential processes and kaolin-based product opportunities from its 150 million tonne kaolin resource previously announced to the ASX on 24 August 2011.**

Australia Minerals and Mining Group Limited (**ASX: AKA**) ("**AMMG**" or "**the Company**"), is pleased to announce that a 20 kilogram crude kaolin sample from the Company's Meckering project supplied to a Chinese technology holder for processing and analysis, has yielded results indicating that 1.06 kilograms of 99% metallurgical grade alumina and 86 grams of 99.99% high purity alumina was successfully produced (see Figure 1 below).

The expert Chinese technology holder used a laboratory scale acid based process for the separation of alumina and silica from kaolin or aluminous clay.

AMMG is submitting the two samples for analytical verification in Australia by an independent consultant and will report the results by the end of September and this will enable the Company to assess its strategic direction on this project.

AMMG is currently evaluating the merits of the Chinese process technology by an independent consultant, as well as a number of other potential process technologies that may be suitable for the Company's kaolin. Currently, kaolin samples have also been sent to Exploration Orbite V.S.P.A. Inc., a Quebec, Canada-based company who have recently patented a clay to alumina process and AMMG are awaiting results. (<http://www.orbitealuminae.com/en/investors/why-invest/>).

AMMG's Kerrigan project has its own unique characteristics of extremely low iron (approximately 0.3%) and titanium dioxide (approximately 0.1%) giving a calcined alumina grade (after the removal of the chemically bound water via heating) of approximately 44.4% alumina and 53% silica.

The Chinese process technology utilised in the testing of AMMG's aluminous clay, separated the silica leaving between 99% and 99.99% alumina. The results of this testing are detailed in Table 1 below.

	<b>Metallurgical Alumina (Al<sub>2</sub>O<sub>3</sub>)</b>	<b>High purity Alumina (Al<sub>2</sub>O<sub>3</sub>)</b>
<b>Experimental water</b>	Industrial and decationised water (third grade)	Decationised water (third grade)
<b>Sample Weight</b>	1065g	85g
<b>Ignition loss</b>	<1 wt%	<1 wt%
<b>Purity, Al<sub>2</sub>O<sub>3</sub></b>	>99 wt%	>99.99 wt%
<b>Crystal Form (XRD)</b>	Alpha (α)	Alpha (α)
<b>Impurities, Fe<sub>2</sub>O<sub>3</sub></b>	<0.02 wt%	<30ppm
<b>Impurities, SiO<sub>2</sub></b>	<0.05 wt%	<45ppm
<b>Impurities, Na<sub>2</sub>O</b>	0.02 wt%	<25ppm

Table 1: Chinese test results of alumina prepared from AMMG's Meckering Project

The lack of impurities in the raw kaolin is attributable to the ancient weathering processes on the Company's ground in the Yilgarn Craton. This weathering process has reportedly occurred over some of the oldest weathering in history. After approximately 180 million years of weathering, mineral elements of silica and alumina remain in a friable, powdery, whitish surface residue with logged thicknesses of up to 42 metres.



Figure 1: The samples of 99.99% high purity alumina (left) and 99% metallurgical grade alumina (right).

## Market Pricing of Ultra-High Purity and High Purity Alumina

Ultra-high pure alumina typically defined as 99.999% purity  $\text{Al}_2\text{O}_3$  is widely used in fillers for magnetic media to boost thermal conductivity, or composite resins and ceramic parts and substrates used in electronic components and semi-conductor manufacturing equipment.

Demand is expected to increase off the back of the expanding market for hybrid cars, electric vehicles, modern electrical appliances, and LED lighting.

The tables below detail the reported per kilogram price of various grade alumina, ranging from \$US141,000 per tonne to \$US396,000 per tonne depending on its purity and particle size.

Type	Purity	Particle size	Price
Alumina alpha	99.999%	0.5-10 $\mu\text{m}$	\$396/kg
Alumina alpha	99.99%	50nm	\$221/kg
Alumina alpha	99.99%	0.3-0.8 $\mu\text{m}$	\$155/kg
Alumina alpha	99.99%	1.5-3.5 $\mu\text{m}$	\$142/kg
Alumina alpha	99.99%	3.5-15 $\mu\text{m}$	\$141/kg

Source: Skyspring Nanomaterials <http://www.ssnano.com/powders>

Table 2: Alumina Pricing from Manufacturers

Type	Purity	Particle size	Price
alpha-alumina	99.999%	5 $\mu\text{m}$	\$176/kg
alpha-alumina	99.99+%	0.5-4 $\mu\text{m}$	\$79.4/kg
alpha-alumina	99.99%	100nm	\$122/kg

Source: Inframat Advanced Materials <http://www.advancedmaterials.us/matchem.htm>

Table 3: Alumina Pricing from Manufacturers

## Mineral Analysis of AMMG's Kaolin Sample

During 1993 and 1994 Rio Tinto's subsidiary CRA Exploration carried out comprehensive exploration and analytical work on the Kerrigan/Bradley kaolin deposit (Kristensen, 1994). As part of their investigations they undertook mineral and chemical analysis of outcrop, diamond drill core, and aircore samples. An example of this work is tabled below from hole PBD220105B, sample 3792112. XRF analysis of diamond drill samples was undertaken on the minus 2 micron kaolinite fraction. All samples were taken from areas now within AMMG's tenements.

Kaolin Grade	$\text{SiO}_2$ %	$\text{Al}_2\text{O}_3$ %	$\text{Fe}_2\text{O}_3$ %	$\text{TiO}_2$ %	$\text{MgO}$ %	$\text{SO}_3$ %	$\text{Na}_2\text{O}$ %	$\text{K}_2\text{O}$ %	$\text{P}_2\text{O}_5$ %	Ig. loss %	TOTAL %
Sample grade from -2 micron kaolinite fraction	46.0	38.3	0.3	0.1	0.1	0.1	0.4	0.7	0.3	13.6	100.0
Calcined Grade	53.3	44.4	0.3	0.1	0.1	0.1	0.5	0.8	0.3	-	100.0

Ig. loss: Loss of ignition (chemically bound water)

Table 4: Mineral Analysis

### Sample Highlights:

- Sample grade minus 2 micron 38% alumina ( $\text{Al}_2\text{O}_3$ ) (calcined grade 44.4%)
- Low impurity iron (Fe) and titanium ( $\text{TiO}_2$ ).

## Expressions of Interest

The Company is progressing discussions with a number of overseas parties who have expressed an interest in potential kaolin-based products. Several overseas delegations have visited the bulk trial test pit located at the Company's Meckering project, and were provided with samples of kaolin for their own analysis and review.

AMMG believes that its kaolin resource may be able to accommodate a number of different product applications simultaneously, and is not confining itself to a sole focus on paper filler applications.



Figure 2: AMMG personnel and an American executive team at the Meckering project test pit.



Figure 3: Ric Dawson and Anhui Lianghui Resources' executive team at the Meckering project test pit.

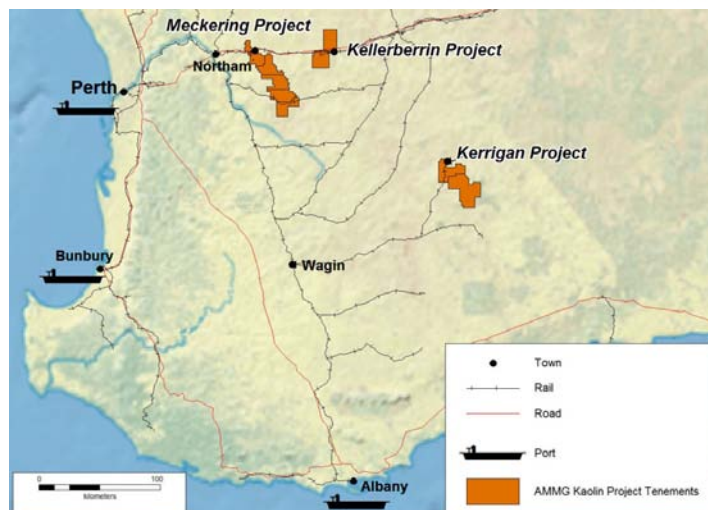


Figure 4: South West Kaolin Project Location Map

### AMMG's Global Resources

The Company has delineated two separate resources on its Meckering and Kerrigan kaolin projects, totalling **150 million tonnes** at 83-85% brightness with an exploration target\* ranging from **215 million tonnes to 320 million tonnes**.

#### Kerrigan Project

	<b>Tonnage</b>	<b>-45 micron <sup>1</sup></b>	<b>Brightness <sup>2</sup></b>
<b>Inferred Resource</b>	<b>85,000,000</b>	<b>52%</b>	<b>85.1%</b>
<b>Exploration Target Range*</b>	140 – 190m	-	-

Table 5: JORC Resources and Exploration Target

#### Meckering Project

	<b>Tonnage</b>	<b>-45 micron <sup>1</sup></b>	<b>Brightness <sup>2</sup></b>
Indicated resource	16,770,000	42.3%	83.2%
Inferred resource	48,280,000	41.8%	83.5%
<b>Total resource base</b>	<b>65,050,000</b>	<b>41.9%</b>	<b>83.4%</b>
<b>Exploration Target Range*</b>	<b>75 - 130m</b>	-	-

Table 6: JORC Resources and Exploration Target

#### Notes

1. The % minus 45 micron was measured by wet screening.
2. Brightness is the ISO brightness of the minus 45 micron kaolin.

\*The term "Target" should not be misunderstood nor misconstrued as an estimate of Mineral Resources and Reserves as defined by the JORC Code (2004), and therefore the term has not been used in this context. It is uncertain if further exploration or feasibility study will result in the determination of a Mineral Resource or Mining Reserve

## Potential Kaolin Product Applications

The Company is currently reviewing the market opportunities for its kaolin. These potentially include:

- as a filler in paper products;
- as a filler or binder in non-paper products such as rubber, plastics etc;
- as a source of ultra pure and metallurgical grade alumina, and
- as a source of high grade silica.

## Yilgarn Craton Geological Background

The kaolinite is a residual weathering product of granite and granitic-gneiss of the Western Gneiss Terrane in the Archaean Yilgarn Craton. AMMG's Kerrigan project is located within this craton, which is one of the oldest on earth and dates back over 2.8 billion years. The kaolin has been formed from the resultant leaching as illustrated in Figure 5 below. The kaolin can typically be found at surface or near surface under a shallow overburden of laterite and mottled clays, with overburden thickness ranging from 1 to 12m with the previous tenement holders reporting thicknesses of up to 42 metres and high grade kaolin ranging up to 37m thick.

This type of kaolin is known as **primary or residual kaolin**, as it is found in-situ or "in its original place". This varies a significant portion of the identified worldwide kaolin, known as **secondary kaolin**, which has been transported by water to a new location and then deposited in relatively narrow lenses 1-2 meters thick with some overburden at the bottom of ancient lakes and rivers.

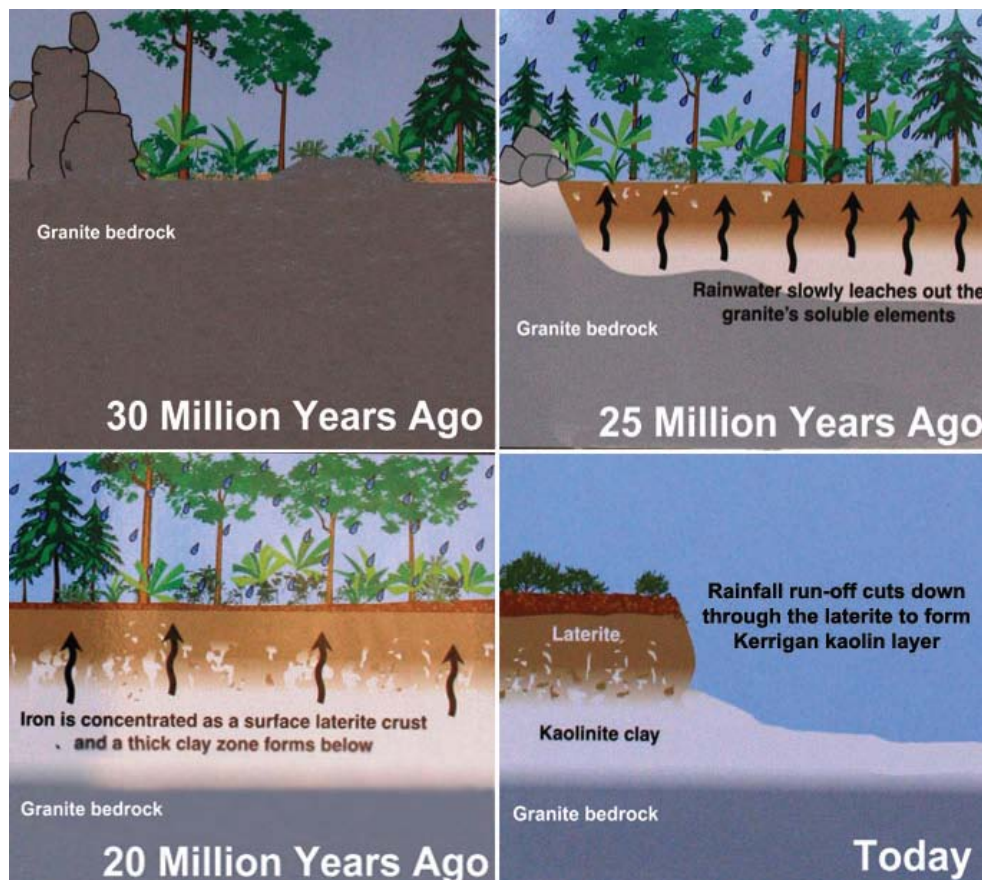


Figure 5: Early formed kaolin development cycle

**ENDS**

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#### **About AMMG**

Australian diversified resources company, AMMG, listed on the ASX in January 2010. The Company was established for the purpose of securing exploration ground over areas that have typically been subject to historical exploration and where significant geological data was available and/or the land was considered sufficiently prospective. Areas with existing or potential access to infrastructure were also targeted.

To date, the Company has identified project areas located in Western Australia and Queensland, which the board believes may have the potential for the realisation of economic resources of these commodities currently targeted - iron ore, kaolin, coal, gypsum, mineral sands and salt.

The Company has eleven granted tenements and 40 applications for tenements covering approximately 9,255km<sup>2</sup> over the project areas.

#### **Competent Persons Statement**

*Technical information in this report is based on information compiled by Mr. Derek Judkins B.Sc. Geology, AMMG Chief Geologist and a member of the Australasian Institute of Mining and Metallurgy. Mr. Judkins has sufficient exploration experience, which is relevant to the styles of mineralisation and types 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 for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC 2004"). Mr. Judkins consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.*