

ASX:LEG

28 February 2013

ASX Announcement

## Metallurgical Testwork Produces Premium Magnetite Concentrate from Melombo East

- Metallurgical testwork of drillcore samples has returned average weight recovery of 33.5% and iron recovery of 87.2%
- The magnetite concentrate is high grade (69.0% Fe) and has low levels of impurities
- Magnetite liberation similar across three drillholes, which are spread over 4km

Legend Mining Limited (“Legend”) is pleased to announce metallurgical testwork results from three diamond drillholes at the Melombo East Prospect in Cameroon West Africa.

Legend Managing Director Mr Mark Wilson said, “The results of this testwork demonstrate that a high percentage of total iron in the samples is consistently reporting to the concentrate and therefore not lost to waste. This coupled with the relatively low impurities indicate that potentially expensive backend flotation will not be required and that a premium concentrate is the end product.”

The similarities with the earlier reported metallurgical testwork (LEG:ASX announcement 14 March 2011), (viz. –high Fe concentrate, low impurities in concentrate, high percentage of total iron in concentrate), are considered very encouraging for the whole of the project.

A comprehensive technical discussion is included in the body of the report.



**Photo 1: DH044, 146.52–149.98 End of Hole**

### Technical Discussion

Consultants ProMet Engineers Pty Ltd (“ProMet”) were contracted to undertake simple metallurgical testing and determination of the procedure for the Davis Tube Recovery (“DTR”) Testing was done on drillcore samples from three diamond drillholes (DH044, 058, 061) at the Melombo East prospect. The drillcore sampled comprised banded magnetite gneiss with minor amounts of biotite-garnet-magnetite gneiss, and contains medium to coarse grained disseminated magnetite throughout, see Photo 1. The drillholes are considered representative of the magnetite mineralisation observed at Melombo East and were selected based on a combination of iron grade, intersection thickness and location within the prospect.

Key points from the testing are:

- A blast furnace grade concentrate with low impurities can be produced at ( $P_{80}$ ) 55 micron.
- Average grade at ( $P_{80}$ ) 45 micron is: 69% Fe, 2.1%  $SiO_2$  and 1.22%  $Al_2O_3$ .
- Low phosphorous 0.006% and low sulphur 0.042%.
- Average weight recovery of 33.5% and iron recovery of 87.2% from 26.5% Fe head grade.
- Similar magnetite liberation response was seen from all three samples, which are spread across 4km, see Figure 1.
- Magnetite is the main form of iron in the samples/deposit.
- Samples respond to conventional magnetic separation techniques and should produce a filtercake for on-site pelletising or pelletising abroad.

The drillhole details and sample intervals are provided below in Table 1, while drillhole locations for Melombo East are shown on Figure 1.

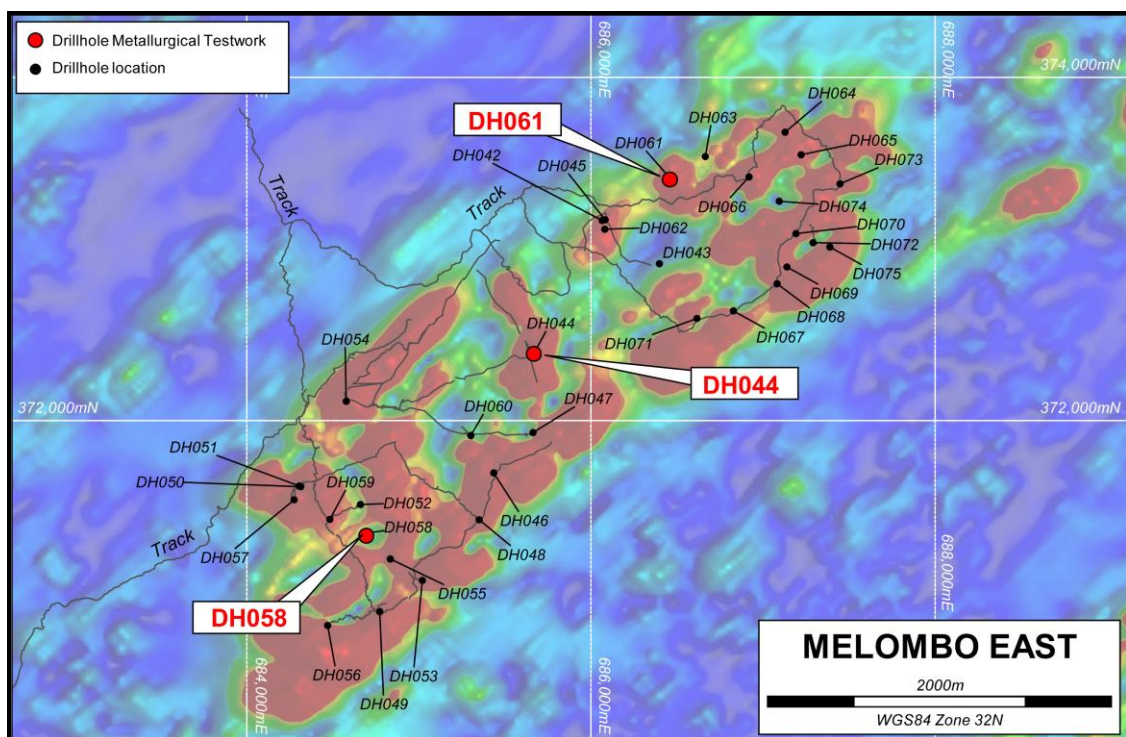


Figure 1: Melombo East Drillhole Location Plan

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**Table 1: Drillhole Details for Metallurgical Samples**

| Drillhole | East   | North  | RL  | From (m) | To (m) | Interval (m) |
|-----------|--------|--------|-----|----------|--------|--------------|
| DH044     | 685676 | 372406 | 700 | 66.96    | 149.98 | 83.02        |
| DH058     | 684683 | 371342 | 885 | 60.75    | 91.84  | 31.09        |
| DH061     | 686455 | 373419 | 662 | 20.00    | 77.36  | 57.36        |

Drilling utilised an Ingetrol man portable diamond drilling rig – HQ and NQ core sizes.

Co-ordinates: Universal Transverse Mercator WGS84, Zone 32, Northern Hemisphere.

Individual samples of nominal 4m intervals (see Appendix 1) were crushed to -3.35mm and split/mixed to form composite samples representative of each of the three drillholes. The head assays for these composite samples are presented in Table 2.

**Table 2: Head Assay of Metallurgical Samples**

| Sample   | Fe %        | SiO <sub>2</sub> % | Al <sub>2</sub> O <sub>3</sub> % | CaO %       | MgO %       | P %          | S %          | TiO <sub>2</sub> % | LOI-1000 %  |
|----------|-------------|--------------------|----------------------------------|-------------|-------------|--------------|--------------|--------------------|-------------|
| DH0044   | 30.5        | 47.1               | 3.89                             | 1.39        | 2.82        | 0.093        | 0.057        | 0.25               | -0.9        |
| DH0058   | 24.4        | 51.9               | 6.25                             | 2.33        | 3.25        | 0.060        | 0.115        | 0.30               | -0.7        |
| DH0061   | 24.6        | 51.4               | 6.87                             | 1.67        | 3.22        | 0.077        | 0.104        | 0.31               | -0.8        |
| Wt'd Ave | <b>26.5</b> | <b>50.1</b>        | <b>5.67</b>                      | <b>1.80</b> | <b>3.10</b> | <b>0.077</b> | <b>0.092</b> | <b>0.29</b>        | <b>-0.8</b> |

Assay Method Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, P, S, TiO<sub>2</sub> by fusion XRF – Amdel Limited, Perth.

LOI – Loss on Ignition at 1,000°C determined gravimetrically.

Each composite sample was then subjected to grind liberation testing using a laboratory rod mill and low intensity magnetic separation (“LIMS”), as well as Davis Tube testing. All samples produced a good blast furnace grade type magnetite concentrate at a grind size of 80% passing (P<sub>80</sub>) 55 micron. Actual measured concentrate grades at (P<sub>80</sub>) 45 micron are shown in Table 3.

**Table 3: Magnetic Concentrate Grade**

| Sample   | P <sub>80</sub> | %Wt         | Fe %        | SiO <sub>2</sub> % | Al <sub>2</sub> O <sub>3</sub> % | CaO %       | MgO %       | P %          | S %          | TiO <sub>2</sub> % | LOI-1000 %  |
|----------|-----------------|-------------|-------------|--------------------|----------------------------------|-------------|-------------|--------------|--------------|--------------------|-------------|
| DH0044   | 40.5            | 40.9        | 69.4        | 2.0                | 1.02                             | 0.10        | 0.41        | 0.005        | 0.013        | 0.220              | -3.6        |
| DH0058   | 47.2            | 30.5        | 68.6        | 2.1                | 1.51                             | 0.20        | 0.41        | 0.006        | 0.063        | 0.380              | -3.7        |
| DH0061   | 47.1            | 29.1        | 68.9        | 2.2                | 1.20                             | 0.12        | 0.42        | 0.006        | 0.060        | 0.460              | -3.8        |
| Wt'd Ave | <b>44.9</b>     | <b>33.5</b> | <b>69.0</b> | <b>2.1</b>         | <b>1.22</b>                      | <b>0.14</b> | <b>0.41</b> | <b>0.006</b> | <b>0.042</b> | <b>0.338</b>       | <b>-3.7</b> |

Assay Method Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, P, S, TiO<sub>2</sub> by fusion XRF – Amdel Limited, Perth.

LOI – Loss on Ignition at 1,000°C determined gravimetrically.

Results based on (P<sub>80</sub>) size of 45µm.

The results of this testwork are encouraging, as they indicate that the magnetite can be readily separated with high iron weight recoveries ranging between 30% and 40%. The testing also returned a high iron concentrate grade with low impurities and it is highly unlikely that this material will require any form of flotation. It is understood that these three samples may not be fully representative of the entire deposit, but could be considered indicative of expected results.

**APPENDIX I: Melombo East Metallurgical Sample Details**

| Sample No. | Drillhole | Depth From | Depth To | Interval | Weight (kg) | Sample Type |
|------------|-----------|------------|----------|----------|-------------|-------------|
| ME44001    | DH044     | 66.96      | 69.23    | 2.27     | 2.8         | 0.25 NQ     |
| ME44002    | DH044     | 69.23      | 70.9     | 1.67     | 1.7         | 0.25 NQ     |
| ME44003    | DH044     | 70.9       | 74.9     | 4        | 4.8         | 0.25 NQ     |
| ME44004    | DH044     | 74.9       | 78.9     | 4        | 5.9         | 0.25 NQ     |
| ME44005    | DH044     | 78.9       | 82.9     | 4        | 5.5         | 0.25 NQ     |
| ME44006    | DH044     | 82.9       | 86.9     | 4        | 4.8         | 0.25 NQ     |
| ME44007    | DH044     | 86.9       | 90.9     | 4        | 5.2         | 0.25 NQ     |
| ME44008    | DH044     | 90.9       | 94.9     | 4        | 5.3         | 0.25 NQ     |
| ME44009    | DH044     | 94.9       | 98.9     | 4        | 5.2         | 0.25 NQ     |
| ME44010    | DH044     | 98.9       | 102.9    | 4        | 6.5         | 0.25 NQ     |
| ME44011    | DH044     | 102.9      | 106.9    | 4        | 5.2         | 0.25 NQ     |
| ME44012    | DH044     | 106.9      | 110.9    | 4        | 5           | 0.25 NQ     |
| ME44013    | DH044     | 110.9      | 114.9    | 4        | 5           | 0.25 NQ     |
| ME44014    | DH044     | 114.9      | 118.9    | 4        | 5.5         | 0.25 NQ     |
| ME44015    | DH044     | 118.9      | 122.9    | 4        | 5.2         | 0.25 NQ     |
| ME44016    | DH044     | 122.9      | 126.9    | 4        | 5.2         | 0.25 NQ     |
| ME44017    | DH044     | 126.9      | 130.9    | 4        | 5.2         | 0.25 NQ     |
| ME44018    | DH044     | 130.9      | 134.9    | 4        | 3.7         | 0.25 NQ     |
| ME44019    | DH044     | 134.9      | 138.9    | 4        | 4.8         | 0.25 NQ     |
| ME44020    | DH044     | 138.9      | 142.9    | 4        | 5           | 0.25 NQ     |
| ME44021    | DH044     | 142.9      | 146.9    | 4        | 5           | 0.25 NQ     |
| ME44022    | DH044     | 146.9      | 149.98   | 3.08     | 4.2         | 0.25 NQ     |
| ME58001    | DH058     | 60.75      | 64.82    | 4.07     | 4.1         | 0.25 NQ     |
| ME58002    | DH058     | 64.82      | 68.85    | 4.03     | 5.2         | 0.25 NQ     |
| ME58003    | DH058     | 68.85      | 72.8     | 3.95     | 4.3         | 0.25 NQ     |
| ME58004    | DH058     | 72.8       | 76.8     | 4        | 3.9         | 0.25 NQ     |
| ME58005    | DH058     | 76.8       | 80.8     | 4        | 4.4         | 0.25 NQ     |
| ME58006    | DH058     | 80.8       | 84.7     | 3.9      | 4.6         | 0.25 NQ     |
| ME58007    | DH058     | 84.7       | 87.86    | 3.16     | 3.7         | 0.25 NQ     |
| ME58008    | DH058     | 87.86      | 91.84    | 3.98     | 4.4         | 0.25 NQ     |
| ME58009    | DH058     | 91.84      | 96.77    | 4.93     | 6           | 0.25 NQ     |
| ME6101     | DH061     | 20         | 24       | 4        | 6           | 0.25 HQ     |
| ME61002    | DH061     | 24         | 28.03    | 4.03     | 4.9         | 0.25 NQ     |
| ME61003    | DH061     | 28.03      | 32.1     | 4.07     | 4.8         | 0.25 NQ     |
| ME61004    | DH061     | 32.1       | 36       | 3.9      | 4.4         | 0.25 NQ     |
| ME61005    | DH061     | 36         | 40       | 4        | 4.7         | 0.25 NQ     |
| ME61006    | DH061     | 40         | 44       | 4        | 5           | 0.25 NQ     |
| ME61007    | DH061     | 44         | 48       | 4        | 4.8         | 0.25 NQ     |
| ME61008    | DH061     | 48         | 52       | 4        | 5.8         | 0.25 NQ     |
| ME61009    | DH061     | 52         | 56.85    | 4.85     | 6.1         | 0.25 NQ     |
| ME61010    | DH061     | 56.85      | 60.85    | 4        | 4.3         | 0.25 NQ     |
| ME61011    | DH061     | 60.85      | 64.85    | 4        | 4.3         | 0.25 NQ     |
| ME61012    | DH061     | 64.85      | 68.85    | 4        | 4.2         | 0.25 NQ     |
| ME61013    | DH061     | 68.85      | 72.85    | 4        | 4.5         | 0.25 NQ     |
| ME61014    | DH061     | 72.85      | 77.36    | 4.51     | 4.8         | 0.25 NQ     |

Visit [www.legendmining.com.au](http://www.legendmining.com.au) for further information and announcements.

**For more information:**

Mr Mark Wilson  
Managing Director  
Ph: (08) 9212 0600

Mr Derek Waterfield  
Executive Director - Technical  
Ph: (08) 9212 0600

**Competent Person Statement**

*The information in this announcement that relates to Exploration Results is based on information compiled by Mr Derek Waterfield, a Member of the Australian Institute of Geoscientists and a full time employee of Legend Mining Limited. Mr Waterfield has sufficient relevant experience in the styles of mineralisation and types of deposit under consideration, and in the activity he is undertaking, to qualify as a Competent Person as defined in the 2004 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code), and consents to the inclusion of the information in the form and context in which it appears.*

*The information in this announcement that relates to Metallurgical Testing is based on information compiled by Ms Kristine Edwards, a Member of the Australian Institute of Mining and Metallurgy and an employee of ProMet Engineers Pty Ltd. Ms Edwards has sufficient experience relevant to the styles of mineralisation and types of deposit under consideration, and in the activity she is undertaking, to qualify as a Competent Person as defined in the 2004 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code), and consents to the inclusion of the information in the form and context in which it appears.*