**BAOBAB RESOURCES PLC**

# PYRO-METALLURGICAL TESTWORK PRODUCES LOW IMPURITY PIG IRON

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Baobab Resources Plc ("Baobab" or the "Company") the iron ore, base and precious metals explorer with a portfolio of exploration projects in Mozambique, is pleased to present the results of pyro-metallurgical test work at its 85% owned Tete pig iron, vanadium and titanium project (the "Tete Project") in which International Finance Corporation ('IFC') hold a 15% participatory interest.

## HIGHLIGHTS

- Bench-scale pyro-metallurgical test work has confirmed the ability to produce a low impurity pig iron product using Baobab's iron ore and local Mozambique thermal coal.
- The reduction and smelting test work has been conducted using coarse concentrates derived from the Tenge resource block at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) laboratories in Australia.
- Reduction test work using a rotary kiln simulator has returned very promising results with in excess of 70% metallisation being achieved after a short residence time using locally sourced thermal coal as a reductive agent.
- Samples from the rotary kiln experiments were inductively smelted in a crucible to produce a clean disc of pig iron reporting 97% Fe (at 1.8% C) and containing a very low level of titanium of 0.002%.

**Commenting today, Ben James, Baobab's Managing Director, said:** *'the results of the pyro-metallurgical test work mark a major milestone for the project. Two critical questions have been answered: will local thermal coals work in the reduction process and will the titanium separate from the iron when smelted? In both cases the answer is a resounding yes. We now possess very clear physical and empirical evidence to support the Company's conviction that we can exploit the project's unique access to low cost thermal coal at the licence boundary together with Baobab's iron ore to produce a high quality / low impurity pig iron at the bottom of the cost curve.'*

## PYRO-METALLURGICAL TEST WORK

### SAMPLES SELECTED

Tests were conducted at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) laboratories in Melbourne, Australia, using -6.3 and -3.35 mm dry cobbed concentrates derived from the Tenge iron deposit. The -0.150 mm undersize fraction was removed from the concentrate samples prior to reduction testing. Please refer to RNS dated 16 July 2012 for full details of the results of the beneficiation test work programme.

50kg samples of local thermal coal were collected from two commercial operations in the immediate Tete area. The coal samples represent a middling by-product that is produced during the coal washing process and, not currently considered viable for export, is being stockpiled.

REDUCTION TEST RESULTS

Initial reduction tests were conducted using a bench-scale rotary kiln simulator that has been calibrated with ilmenite reduction kilns at operations in Western Australia. The aim of the test work was to increase the metallic iron content of the Tenge concentrates prior to direct charging to an electric arc furnace that is designed to produce pig iron and a $TiO_2$-rich slag. Baobab is considering a rotary kiln as a reactor and using a local thermal coal as the reductive agent. Reductive roasting tests on the Tenge -6.3 and -3.35 mm dry cobbed concentrates at 1100°C achieved in excess of 70% metallisation after just 30 minutes residence in the kiln. Coal addition rates, temperatures and reduction times were established to simulate those used by current pig iron producers utilising titanomagnetite feedstock.

SMELTING TEST RESULTS

An inductively heated furnace was used to confirm the ability to produce pig iron from the reduced iron samples and determine the quality of the pig iron. The samples from the reduction roasting experiments were inductively heated and melted in a crucible to produce a clean pig iron disc with little slag.

The test was un-fluxed and therefore contains some Sulphur and Phosphorus that would be otherwise expected to be removed with the slag and with secondary metallurgical treatment in the ladle after tapping. Similarly much of the Vanadium would be removed from the hot metal and recovered as a Vanadium-rich slag prior to final pig iron production. The low Carbon content of the pig iron is not representative of the Submerged Arc Furnace product which is expected to be in the order of 3.5%.

The chemical analysis of the iron disc in the table confirms that the pig iron after full treatment is likely to meet a typical pig iron specification (EN 10 001:1990; GOST 805-95) for Electric Arc Furnace (EAF) steelmaking. Of particular importance is the very low level of Titanium (Ti), demonstrating that the process is able to remove critical deleterious components from the original resource material.

**Plate 1: Disc of Baobab pig iron**

| Product | Assays (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fe | C | S | P | Ti | V | Cu | Ni | Co | Cr |
| Pig Iron (melt -1 iron [A]) | *97.0* [#1] | 1.76 | 0.200 | 0.161 | 0.002 | 0.102 | 0.037 | 0.209 | 0.045 | 0.175 |

[#1] – Fe approximate by difference, Carbon and Sulphur analysis by LECO and other analytes by ICP OES.

*The information in this release that relates to Exploration Results is based on information compiled by Managing Director Ben James (BSc). Mr James is a Member of the Australasian Institute of Mining and Metallurgy, is a Competent Person as defined in the Australasian Code for Reporting of exploration results and Mineral Resources and Ore Reserves, and consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.*

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