Epanko Deposit: Doing it the JORC way

Kibaran Resources Limited (ASX: KNL)
Mr Andrew Spinks, Executive Director

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The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Spinks, who is a Member of The Australasian Institute of Mining and Metallurgy included in a list promulgated by the ASX from time to time. Andrew Spinks is a director of Kibaran Resources Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Andrew Spinks consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.
CORPORATE SNAPSHOT

**Capital Structure**

<table>
<thead>
<tr>
<th>KNL:ASX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shares on Issue</td>
</tr>
<tr>
<td>Share Price (3 December 2014)</td>
</tr>
<tr>
<td>Market Capitalisation</td>
</tr>
<tr>
<td>Net Cash (1 Oct 2014)</td>
</tr>
<tr>
<td>Enterprise Value</td>
</tr>
</tbody>
</table>

**Options**

- Listed Options: Exp 5 August 2015, Ex $0.20 4.5m
- Unlisted Options: Various Exp, Various Ex Prices 9.9m
- Total: 14.4m

**Shareholders**

- Directors & Management: 19%
- Other Top 20 Shareholders: 20%
- Other Shareholders: 61%
KEY HIGHLIGHTS (12 MONTHS)

- **World-class graphite assets**
  - **MAHENGE**
    - **Flagship Epanko Deposit:** Recently upgraded JORC Resource, advanced metallurgy, and ongoing Environmental and Social Impact studies
  - **Significant value upside with Positive Scoping Study (NPV $213)**
- **MERELANI**
  - Exploration target of between 60Mt and 200Mt grading between 9 and 11%TGC
  - **MoU signed** to consolidate Merelani graphite province which includes the historic graphite mine
- **Graphite Sales and Offtake (30,000 tpa) - 20,000 tpa LOI signed with Thyssenkrupp and 10,000 tpa binding off-take agreement signed with major European graphite trader for 10 years of flake graphite concentrate off-take**
- **Significant Market Opportunity:** Growing global graphite demand, plus market shortage of large flake product
- **Graphite & Graphene 3D Printing:** exposure to high-growth industry via **3D Graphtech Industries**
  - Agreement signed with CSIRO for initial research
- **Experienced Board and Management** with local industry experience and technical expertise

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1. This production target as production may not occur. Production may only occur on upgrade of resources and a positive feasibility study which is uncertain at the stage.
2. In accordance with Clause 17 of the JORC Code 2012, any reference to “Exploration Target” in the announcement, in terms of target size and type should not be taken as an estimate of Mineral Resources or Ore Reserves. The potential quantity and grade is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the definition of a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource calculated in accordance with the JORC code.
BOARD AND MANAGEMENT

John Park - Non-Executive Chairman
- Metallurgist with successful track record in technical, financial and management in minerals industry
- Held Executive and Board positions for UK, Canadian and Australian listed companies
- Founder & Exec. Director of TSX-listed SAMAX Gold, which developed and operated Merelani graphite mine in Tanzania – the first new mine since Independence and remains the largest historical production of graphite in East Africa

Andrew Spinks - Executive Director
- Geologist with 25 years experience
- Expertise in exploration, mining and management across a number of commodities
- Association with operations in Africa for the past 13 years, including co-founding Tanzgraphite Pty Ltd

Grant Pierce OAM - Executive Director - Projects
- Mining engineer with over 25 years experience
- Extensive management experience & knowledge of Tanzanian mining sector
- Senior operational management roles in mining and exploration projects in Africa at several companies including, Perseus Mining, Resolute Mining, Africa Resources and Barrick Gold in Tanzania

Robert Hodby - Company Secretary
- Over 20 years industry experience in financing and administration of public and listed companies at both operational and corporate levels
- Provides corporate, management and accounting advice to a number of companies involved in the resource and energy industries
FOCUSED STRATEGY

Goal:
- To become a major producer of high value, premium quality large flake graphite
- Establish strategic partnerships to participate in the new industrial revolution through graphite and graphene

Strategy:
- Fast-track Epanko Graphite Deposit towards development and production
- Consolidation of Merelani graphite assets and historical mine
Mineral-rich landscape:
- Significant graphite endowment
- Largest flake sizes in East Africa - high metamorphic gradient
- High-grade graphite occurrences

Mining-friendly country:
- Stable Government committed to mining sector growth and development
- Significant mining support services
- Extensive infrastructure network (road, rail and ports)
- Third largest gold industry in Africa
- Significant commercial mining activity in place
- Access to skilled and educated local workforce

New Road and Bridge Constructions on route to Epanko
WHY KIBARAN?

Epanko graphite is premium, world class quality:

- Ultra High Purity: 99.98% - No limitation of applications
- **Size matters:** Value is a function of flake size and purity
- Large flake (+180µm), 94%-97% C (carbon) varieties command premium market prices
- Future applications demand requires large flake graphite
- **Expanded graphite** is used to produce graphite foils – inert sealing material used in high temperature, high pressure settings (e.g. gaskets and computer heat sinks)
- Expanded graphite used in **thermally efficient building products**
- Graphite suitable for **spherical graphite battery market**

Significant supply opportunities expected to be limited to producers of large flake graphite with ‘expandable’ properties
Kibaran is the first ASX company to sign a binding off-take agreement and partnership for graphite sales

Agreements in place for 30,000 tpa for 10 years:
- 20,000 tpa LOI with ThyssenKrupp and will assist with debt.
- 10,000 tpa Binding Offtake with sophisticated European graphite market trader

Discussions commenced with traders and end-users for further graphite off-take agreements – Japan and USA

European ‘s have been investigating new sources of large flake graphite for the past two years. Worldwide review of projects identified the Epanko deposit as its preferred new source.

Kibaran remains the only company globally with a binding offtake agreement outside China

Validates quality and commercial appeal of Kibaran’s large flake graphite, and longevity supports a strong long-term outlook for natural graphite demand

1 This is not a production target as production may not occur. Production may only occur on upgrade of resources and a positive feasibility study which is uncertain at this stage
TANZANIAN GRAPHITE

Significant Graphite Endowment:

- Overtake India (120ktpa) and Brazil (80ktpa) production
- Long term stable supply of premium quality large flake graphite

Key graphite projects:

- Mahenge Project – comprises the priority Epanko Deposit
- Merelani-Arusha Project – MoU signed with Richland, existing historical graphite mine, previous 15ktpa production
- Tanga Graphite Project
EPANKO DEPOSIT JORC CONSIDERATIONS

2012 JORC Clause 49 – Reporting Industrial Minerals. Key points applicable to Graphite

- Grade (Assays) may not be relevant
- Quality criteria may be more applicable

Reporting Mineral Resources

- Qualities (Flake Size, Purity, Impurities etc)
- Product Specification, Proximity to Markets, Product Marketability
- Common practice is to report saleable product, however commercial sensitivities may not permit this style of reporting

**Understanding the graphite market is Critical**

**Kibaran’s priority is fast tracking to production based on existing market demand**

(Market requires graphite grade of 94-97% C and seeks large flake > 180 micron)

“Without a market, an industrial mineral deposit is merely a geological curiosity”
EPANKO DEPOSIT

- Total JORC Mineral Resource Estimate: **22.7Mt at 9.8% TGC for 2.22Mt contained graphite**
- Scoping study based on Indicated Mineral Resources Estimate of **12.8Mt at 10.0% TGC for 1.28Mt contained graphite**
- **Highest grade graphite Mineral Resource to be delineated in Tanzania**
- Grade compares favourably to past graphite-producing operations in Tanzania:
  - Merelani Mine: 8.3% TGC
- Resource estimate forms a sound technical basis for further studies

Robust and thick high-grade zones of oxidised mineralisation assist low operating costs - simple liberation with no fine grinding or acid treatments

*as released 22 May 2013*
GEOLOGICAL FINDINGS

Mineralogy and Petrographic Findings

- Locally no relationship between flake size and grade
- Significant quantities of large flake graphite with flake sizes frequently in excess of 1000 micron long (In-situ)
- Epanko dominant host mineral Scapolite (a calc silicate mineral)
- Low sulphide and not intercalated with Graphite

Rock Mineralogy Impacts

- Depth of weathering
- Graphite Liberation and Yield
Metamorphic Gradient
- High metamorphic gradient is the key factor to graphite crystallinity - large flake size distribution and high purity

Mineralogy at Epanko
- Eclogite and Granulite facies - highest pressure and high temperature

Benefit of High Metamorphic Gradients
- High Purity (99.98%) and Melting Point (1,305°C)
- Low percentage of fine flake (< 75micron) = low value and likely unsaleable (oversupply)
- High percentage of large flake provides higher basket prices and increased saleability

Grade is not related to flake size. Flake size is determined from metamorphic gradient
SCOPING STUDY FLOWSHEET AND DESIGN

Flowsheet and plant design:
- Simple flowsheet design
- Outstanding test results producing an attractive size fraction

<table>
<thead>
<tr>
<th>Size (Micron)</th>
<th>Portion of size Fraction (%)</th>
<th>Fixed Carbon (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 500</td>
<td>8.4</td>
<td>97.6</td>
</tr>
<tr>
<td>&gt; 300</td>
<td>13.2</td>
<td>95.4</td>
</tr>
<tr>
<td>&gt; 180</td>
<td>28.6</td>
<td>93.8</td>
</tr>
<tr>
<td>&gt; 106</td>
<td>23.6</td>
<td>93.6</td>
</tr>
<tr>
<td>&gt; 75</td>
<td>10.4</td>
<td>91.0</td>
</tr>
<tr>
<td>&lt; 75 *</td>
<td>15.8</td>
<td>87.5</td>
</tr>
</tbody>
</table>

Kibaran has the highest large flake distribution and lowest fines fraction among its peers

* Fine fractions (<75micron) are likely to be in oversupply and likely to be unsaleable
Flotation Results:
- Weathered Saprolitic Rock Zone (Surface to 80m)
- Transition Rock Zone (80m to 100m depth)
- Fresh Rock Zone (+100m)

Results confirm the uniform flake distribution across the various rock types.

Flotation results for Weathered Saprolitic Zone (Surface to 80m):

<table>
<thead>
<tr>
<th>Size (Micron)</th>
<th>Mesh</th>
<th>Cumulative % Retained</th>
<th>% Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 500</td>
<td>&gt;30</td>
<td>8.4</td>
<td>8.4</td>
</tr>
<tr>
<td>&gt; 300</td>
<td>&gt;48</td>
<td>21.6</td>
<td>13.2</td>
</tr>
<tr>
<td>&gt; 180</td>
<td>&gt;180</td>
<td>50.2</td>
<td>28.6</td>
</tr>
<tr>
<td>&gt; 106</td>
<td>&gt;150</td>
<td>73.8</td>
<td>23.6</td>
</tr>
<tr>
<td>&gt; 75</td>
<td>&gt;200</td>
<td>84.2</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Cumulative % Retained versus Size Fraction

% Retained within Size Fraction

Weathered
Transition
Fresh
FUTURE PRICING

- Stormcrow Research – Highlights the competitive advantage of having a high proportion of Large (>180 micron) and Jumbo (>300 micron) flake distribution; combined with a low proportion of Fine (<75 micron)

<table>
<thead>
<tr>
<th>FLAKE SIZE</th>
<th>NAME</th>
<th>MICRONS</th>
<th>MESH</th>
<th>SIZE FRACTION</th>
<th>PRICE (US$/t)</th>
<th>VALUE (US$)</th>
<th>PRICE (US$/t)</th>
<th>VALUE (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jumbo</td>
<td>&gt; 300</td>
<td>&gt;48</td>
<td>21.6</td>
<td>$2,300</td>
<td>$497</td>
<td>6175</td>
<td>$1,334</td>
</tr>
<tr>
<td></td>
<td>Larger</td>
<td>&gt;180</td>
<td>&gt;180</td>
<td>28.6</td>
<td>$1,300</td>
<td>$372</td>
<td>1165</td>
<td>$333</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>&gt;106</td>
<td>&gt;150</td>
<td>23.6</td>
<td>$950</td>
<td>$224</td>
<td>517</td>
<td>$122</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>&gt; 75</td>
<td>&gt;200</td>
<td>10.4</td>
<td>$750</td>
<td>$78</td>
<td>493</td>
<td>$51</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>&lt; 75</td>
<td>&lt;200</td>
<td>15.8</td>
<td>$550</td>
<td>$87</td>
<td>359</td>
<td>$57</td>
</tr>
</tbody>
</table>

Weighted Basket Price (Price x Size Fraction) $1,258 $1,897

- Stormcrow forecast prices provide a 50% increase in basket price value over the current graphite prices

POSITIVE SCOPING STUDY

HIGHLIGHTS

➢ Indicates Epanko as an economically robust graphite deposit capable of producing premium quality large flake graphite that has no limitations to its industrial use

➢ Net Present Value (NPV) of $213m

➢ Capital payback period of 2.5 years

➢ Extremely low strip ratio (W:O) with first 15 years 1.3 to 1 and LOM of 2.2 to 1

➢ Substantial mine life of 27 years

STUDY CONFIRMED

➢ Confidence to advance immediately to a Feasibility Study based on production of 40ktpa

➢ Ability to increase production as market demand increases

<table>
<thead>
<tr>
<th></th>
<th>Base Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant throughput</td>
<td>(tpa)</td>
</tr>
<tr>
<td>Plant Recovery</td>
<td>(%)</td>
</tr>
<tr>
<td>Feed Grade</td>
<td>(%)</td>
</tr>
<tr>
<td>Production Concentrate</td>
<td>(tpa)</td>
</tr>
<tr>
<td>Base Price Assumption</td>
<td>($/t)</td>
</tr>
<tr>
<td>Cost/t Concentrate</td>
<td>($/t)</td>
</tr>
<tr>
<td>Mine life</td>
<td>(yrs)</td>
</tr>
<tr>
<td>Pre-Production Capital</td>
<td>($m)</td>
</tr>
<tr>
<td>Strip ratio</td>
<td>(W:O)</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>(%)</td>
</tr>
<tr>
<td>Net Present Value (NPV)</td>
<td>($m)</td>
</tr>
</tbody>
</table>
# 2014 – FAST TRACK TO PRODUCTION

Program on schedule and major value drivers expected in short term

<table>
<thead>
<tr>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAHENGE GRAPHITE PROJECT (40ktpa base case)</strong></td>
</tr>
<tr>
<td>Exploration - Development</td>
</tr>
<tr>
<td>Drill pad preparation</td>
</tr>
<tr>
<td>Drilling to Upgrade Resource from Inferred to Indicated</td>
</tr>
<tr>
<td>Water Monitoring Bores</td>
</tr>
<tr>
<td>Diamond Drilling - Metallurgical/Geotechnical Engineering</td>
</tr>
<tr>
<td>Resource Estimation</td>
</tr>
<tr>
<td>Feasibility Study</td>
</tr>
<tr>
<td>Mine design, optimisation and scheduling</td>
</tr>
<tr>
<td>Metallurgy and Pilot Plant Testwork</td>
</tr>
<tr>
<td>Environmental and Social Base Line Studies</td>
</tr>
<tr>
<td>Issue of Environmental Certificate by NEMC</td>
</tr>
<tr>
<td>Mining Licence Application</td>
</tr>
<tr>
<td>Feasibility Study</td>
</tr>
<tr>
<td>Detailed Processing Plant and Infrastructure Engineering</td>
</tr>
<tr>
<td>Financing</td>
</tr>
</tbody>
</table>

* Subject to a positive feasibility study is developed, which is uncertain at this point, the Company will advance these items.
MERELANI GRAPHITE PROJECT

- Located in world-class graphite province
- MoU signed to provide access to strategic graphite rights at project. Parties working towards binding offtake agreement
- Merelani mine had largest historical production (15ktpa) in East Africa
- Associated mine infrastructure and historical resource exists
- **Significant upside:** Graphitic schist has been mapped over 1.5km length and up to 200m widths to the east of Merelani graphite mine
- Previous work returned rock chips assayed 8.1%TGC and metallurgical head grade 17.1% TGC

Tanzanite crystal on graphite matrix
(Merelani Tanzanite Mine)
Epanko Deposit
- JORC Mineral Resource upgraded to 22.7Mt at 9.8% TGC for 2.22Mt contained graphite
- Significant upside to increase resource
- Positive Scoping Study

Historical Graphite Mine
- Strategic consolidation of graphite assets
- Previously operated 15ktpa plant and historical production

Early Stage Exploration
- Significant exploration potential and infrastructure access
Strategic alliance signed with leading Australian 3D printing company - 3D Group

Established jointly owned 3D Graphtech Industries

3D Graphtech Industries has entered into an Initial Research Agreement with CSIRO to investigate the application of graphite and graphene in 3D printing

Goals:
- Pursue patents
- Engage in collaborative research partnerships
- Seek value-add strategic relationships
- Graphite to be sourced exclusively from Kibaran

Downstream Exposure:
- Graphtech provides Kibaran a vehicle to participate in 3D printing market
- 3D printing market forecast to grow from US$3.8 billion to US$16.2 billion by 2018
- Proven technology with production of car parts, jewellery, dental applications
SUMMARY

1. Graphite is a 21st century growth commodity driven by technology – but significant supply opportunities expected to be limited to producers of premium, large flake graphite.

2. Kibaran is well placed to become a premium, large flake graphite producer in near term. - 30,000 tpa with LOI with ThyssenKrupp and Binding offtake with European Trader.

3. Focused strategy, proven team, strategic partnerships & binding off-take.

4. Epanko confirmed as containing a premium, ultra high purity, large flake graphite product and having highly attractive economics based on low capex and high margins.

5. Epanko being fast-tracked into production & consolidation of Merelani graphite province provides opportunity to quickly advance second premium product production centre.
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