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# **INTERNATIONAL BASE METALS LIMITED**

# **QUARTERLY ACTIVITIES REPORT – End March 2013**

# HIGHLIGHTS

### Corporate

• The proposed investment by Heilongjiang Heilong Resources Investment Co. Ltd (Heilong) was approved at an Extraordinary General Meeting (EGM) of shareholders on 29 January 2013.

### **Omitiomire Copper Project**

- A scoping study supported the likely feasibility of a project to treat 40,000 tonnes per month (**tpm**) of oxide and mixed oxide-sulphide ore, to produce both sulphide copper concentrate and cathode copper by means of a crush screen –mill sulphide flotation –SX-EW process.
- A revised resource for the proposed oxide copper project has been estimated.
- A feasibility study on the oxide copper project has been initiated.

### **Epembe Tantalum-Niobium-Uranium Project**

- A preliminary mineralogical and metallurgical study indicated the likelihood of readily separating the ore mineral, pyrochlore, from the host rock.
- A Phase 1 joint venture exploration programme was initiated.

#### **Other Projects**

- A technical review resulted in prioritised exploration targets and a revised exploration programme.
- At the Sib copper deposit, in the Kalahari Copperbelt project area, a preliminary financial study is in progress.

# **CORPORATE ACTIVITIES**

### Work Health and Safety

No significant safety incidents were recorded.

### **Company Strategy**

IBML has scheduled a Strategic Planning workshop for April 2013. Topics for discussion include:

- Review of current status;
- Consideration of potential growth opportunities;
- Discussions regarding possible exit and or liquidity for current shareholders;
- Future funding requirements;
- Review of the IBML Vision, Mission, Values and Strategy.

#### **Capital Raising and Investor Relations**

- The proposed investment by Heilongjiang Heilong Resources Investment Co. Ltd (**Heilong**) to subscribe for A\$30 million in the share capital of IBML, at an issue price of 20 cents per share, was approved at an Extraordinary General Meeting (**EGM**) of shareholders on 29 January 2013.
- Heilong currently holds an approximate 6.3% interest in IBML and is a related party of West Minerals which holds an approximate 30.0% interest in IBML. After the proposed transaction has been completed, Heilong and West Minerals will together hold a combined 53.9% interest in IBML.
- IBML agreed to extend the timing of the first tranche of funds from Heilong. Payments under the Transaction are now expected to take place:
  - \$15 million on or before 15 April 2013; and
  - \$15 million on or before 14 June 2013.

The Transaction is subject to approval by various government agencies in the People's Republic of China.

- Azure Capital has been retained as non-exclusive corporate advisor to IBML.
- The MD presented at the Africa Mining Conference in Livingstone, Zambia.
- The MD attended "Mines and Money Hong Kong" from 18 till 22 March.

#### **Board Meetings**

Board meetings were held on 29 January and 6 March 2013.

### **Extraordinary General Meeting**

An EGM was held in Sydney on 29 January. The purpose of the EGM was for shareholders to vote on a resolution to approve the proposed subscription by Rui King Resources Limited (the wholly owned nominee of Heilongjiang Heilong Resources Investment Co., Ltd (**Heilong**)) of A\$30 million in the

share capital of IBML, at an issue price of 20 cents per share (**Transaction**), pursuant to the terms of the subscription agreement dated 12 December 2012 between IBML and Heilong (**Subscription Agreement**). Details of the Subscription Agreement, including details of the outstanding conditions to completion of the subscription, were described in the Notice of Extraordinary General Meeting and Explanatory Memorandum.

The directors of IBML who are not directors or shareholders of Heilong or West Minerals (**Independent Directors**) supported the proposed Transaction.

A number of shareholders had expressed concerns regarding the proposed Transaction including a desire for an exit or liquidity in future.

The resolution was approved by shareholders.

# Craton Mining and Exploration (Pty) Ltd ('Craton')

MD Visit: The MD visited Namibia from 12 till 21 February.

Craton Board: A Board meeting was held on 21 February.

<u>Omitiomire Surface Rights agreement</u>: The surface rights are due for renewal by 1 June 2013.

<u>Kopermyn joint venture:</u> IBML has withdrawn its application for renewal of EPL 3372 in Northern Namibia. This follows disappointing assay results from drilling into the large geophysical anomaly that had been identified under Joint venture with HPX TechCo Inc.

### Epembe Project

- IBML notified African Mining Capital Pty Ltd (**AMC**) that IBML exercises its option to proceed with the next phase of the Epembe Joint Venture to earn a 31 % holding in Epembe through expenditure of \$1.7 million.
- Further progress was made towards the JV agreement, Management Agreement and Royalty Deed with AMC for the Epembe project.

# **Australian Projects**

<u>AuriCula Mines Pty Ltd</u>: Through agreed expenditure on exploration, Actway Pty Ltd (a subsidiary of Glencore Australia) has earned a 90% interest in the two tenements which constitute the Mount Hope Project. Cobar Management Pty Ltd (another Glencore subsidiary) had previously earned a 90% interest in the Shuttleton Project. AuriCula Mines has a 10% free-carried interest in both projects through to completion of a feasibility study and a decision to mine.

## **REVIEW OF PROJECTS**



Figure 1. Craton's exploration projects in Namibia

#### **OMITIOMIRE COPPER PROJECT**

#### Background

Through drilling some 600 holes totalling over 70,000m, Craton has defined a deposit which extends 3,500m north-south and dips mainly to the east at a shallow angle. The resource, to Indicated and Inferred status, stands at 136 million tonnes (**Mt**) at 0.53% Cu (at a 0.25% Cu cut-off grade).

Figure 2. Plan of Omitiomire deposit, showing drill hole locations. The three clusters of closely-spaced holes indicate near-surface zones of oxide and mixed oxide-sulphide copper proposed for early mine development

During 2010, Craton conducted a pre-feasibility study on a 69 Mt in-pit resource. A processing plant was planned to treat 6 million tonnes per annum (**Mtpa**) by a crush-screen-dense medium separation (**DMS**)-flotation process. Considerable



infrastructure cost was required for water and power supply. The study resulted in an Internal Rate of Return (**IRR**) of 12%, at a copper price of US\$5,500 per tonne (US\$2.50 /lb). Further feasibility studies were deferred pending identification of additional resources or improved economics.

Subsequently, IBML proposed a two-stage approach to bring Omitiomire into production:

- Phase 1: a small project based on near-surface oxide and mixed oxide-sulphide copper;
- Phase 2: a larger project based on the deeper sulphide copper resource.

The advantages of this approach are:

- Early revenue from a small low throughput plant;
- Initial water and power requirements minimised;
- No river diversion;
- Low Capex entry;
- Reduced perceived investment risk;
- A Phase 1 Mining Licence would secure the ground for a Phase 2 Mining Licence;
- Possible funding of sulphide copper resource expansion and definitive feasibility study from cash flow.

A 2012 "Order of Magnitude" study determined that a Phase 1 shallow copper operation is likely to be profitable as a stand-alone operation from three shallow pits and a beneficiation process of crush – screen – DMS – mill – sulphide flotation – solvent extraction – electro-winning (**SX-EW**).

# **Oxide Copper Project - Scoping Study**

During the quarter, Craton completed a scoping study on the proposed oxide copper project. This study involved:

- Preliminary pit designs of three areas of shallow copper;
- Close-spaced (25m x 25m) drilling on selected areas;
- Resource estimation on the three pit areas;
- Planned 6-year life of mine;
- Additional shallow oxide resources to extend the life of mine;
- Bench-scale tests on oxide copper samples;
- Metallurgical and plant design studies;
- Excavation of a 33 tonne bulk sample and a pilot plant study;
- Initial tailings disposal design;
- Social and environmental impact assessment (in progress);
- High level profitability estimates.

The scoping study supported the likely feasibility of a project to treat 40,000 tonnes per month ('tpm') of oxide and mixed oxide-sulphide ore; to produce both sulphide copper concentrate and cathode copper by means of a crush – screen –mill – sulphide flotation –SX-EW process.

### **Oxide Copper Resource and Resource Potential**

In January 2013, consultants Bloy Resource Evaluation provided a new resource estimate for oxide and mixed oxide-sulphide copper in the three proposed pits at a cut-off grade of 0.25% Cu:

Pit	Resource		
	t (000)	Cu%	Cu (t)
ВТ	553	0.82	4 526
Palm	874	0.95	8 324
Pan	565	0.79	4 449
Total	1 992	0.87	17 330

The resource comprises oxide copper (mainly malachite and chrysocolla) to a depth of 20m and mixed oxide-sulphide copper to a depth of 40m. In addition to the 2.0 Mt resource in three pits, there is shallow oxide copper in areas 4 to 8 in Figure 3. These five areas have mineable potential of 0.9 Mt at 0.6% Cu. Craton is currently engaged in a drilling programme to test these targets and to sterilise planned infrastructure areas



Figure 3. Proposed site layout

### **Oxide Copper – Feasibility Study**

IBML has now contracted Johannesburg-based Matomo Projects to manage a Definitive Feasibility Study (**DFS**) with a planned completion of September 2013.

The objective of the DFS is to provide a business proposition based on the Capex and Opex with accuracy of -5% + 10%, on the recommendations of the scoping study as well as the additional studies including pilot plant metallurgical test work, mining schedule and mine planning.

#### **Omitiomire Exploration**

An exploration strategy review identified targets for additional drilling. The review also identified the need for a new regional geological interpretation and for geophysical and geochemical orientation surveys prior to any disturbance of the property by mining-related activities.

At the Waainorth prospect, 20 km northwest of Omitiomire, a 15-hole reverse circulation (**RC**) drilling programme was completed during the quarter. Drill holes intersected a narrow copper zone within a pyritic sulphide horizon, but the drilling did not provide indications of a substantial copper deposit.

#### **EPEMBE PROJECT**

#### Tenement

The project is within EPL 3299, held by African Mining Capital Pty Ltd (**AMC**) through a Namibianregistered subsidiary, Gazania Investments Twenty Five (Pty) Ltd. The tenement, covering an area of 290 km<sup>2</sup>, was granted for a three-year period on 15 August 2009 and was renewed for a two-year period on 15 August 2012.

#### **Location and Infrastructure**

The project area is located in north-western Namibia, about 600 km northwest of Windhoek and about 45 km south of the Kunene River, which forms the border with Angola.

The project area is well located with respect to infrastructure:

- 3 km from a major road;
- 45 km from permanent water supply at the Kunene River;
- New 33 kV power lines pass 2 km west of the project area;
- 85 km from a 30 MW hydro power station on the Kunene River at Ruacana;
- Close to Opuwo, capital of the Kunene Region: supplies, fuel, hospital;
- Regional airports at Opuwo and Ruacana.



Figure 4. Epembe Project: Location and infrastructure

The project is located on communal land. AMC has developed a good relationship with the local communities.

# Geology

The Epembe deposit is hosted in a northwest-trending dyke (i.e. a narrow steeply-dipping intrusive body), 10 km long and 200 - 400m wide, which outcrops as a line of low but rugged hills. The dyke is a composite body, composed of syenite (an intrusive igneous rock composed largely of potassium feldspar) and carbonatite.

Carbonatite is an unusual igneous rock consisting mainly of the mineral calcite (calcium carbonate - CaCO<sub>3</sub>), with subordinate amounts of aegirine (a sodium pyroxene), apatite (a phosphate mineral) and a number of minor minerals, including pyrochlore which contains concentrations of tantalum (**Ta**), niobium (**Nb**) and uranium (**U**).

Within the dyke are narrow (several metres wide) zones of high grade Ta Nb U within a wider barren to low grade mineralised body. High grade zones are typically 200 ppm  $Ta_2O_5$ , 900 ppm  $Nb_2O_5$ , 200 ppm  $U_3O_8$  and 2% phosphate ( $P_2O_5$ ).



Figure 5. Field inspection of Epembe carbonatite



Figure 6. Coarse-grained carbonatite with crystals of aegerine, pyrochlore and apatite

# **Drilling and Assaying**

During the reporting period, Craton carried out a programme of diamond drilling to intersect the mineralised carbonatite bands at depths of up to 100m below surface. Considerable further drilling is required to demonstrate continuity and grade of the mineralised zones.

Assays from the drilling were delayed when the laboratory in Swakopmund (Namibia) experienced difficulties with its analytical equipment. The delay provided an opportunity for Craton to

investigate the most effective analytical technique. Craton selected 12 samples for analysis by various methods at different laboratories. This work demonstrated that:

- Craton's hand-held XRF unit provides rapid and effective scanning to select samples for laboratory analysis;
- Craton can have confidence in the results provided by the Swakopmund laboratory of Bureau Veritas;
- Periodic check samples should be carried out by other methods at different laboratories.

Because of the laboratory delays, final assays from the first programme of diamond drilling are not yet available. Preliminary results support the high grades of tantalum and uranium previously reported.

# Mineralogical and Metallurgical Study

US-based consultants Tony Mariano Senior and Junior visited the site during January and collected samples for mineralogical and preliminary metallurgical analysis.

Pyrochlore is a complex oxide mineral - composition  $(Na,Ca,Sr,Pb,U)_2(Nb,Ta,Ti)_2O_6(OH,F)$ . The Epembe samples selected by the consultants contain high concentrations of tantalum and uranium.



Figure 7. Scanning electron microscope (SEM) image showing pyrochlore crystals (pale blue) with apatite (green), feldspars (dark blue) and iron oxide after pyrite (red)

Preliminary bench-scale metallurgical tests performed on five samples from Epembe showed the following results:

 Pyrochlore occurs as individual crystals and as clusters of crystals. The crystals range in size from < 1 mm to > 2 mm. Parts of the carbonatite are rich in apatite, with grains averaging ~ 0.5 mm in size. Because of the coarse grain sizes, both pyrochlore and apatite can be readily liberated with crushing and coarse grinding.

- Pyrochlore has a specific gravity (SG) of 4.5 5, so can be separated by gravity. Heavy liquid separation produced concentrates containing iron oxide, pyrochlore and zircon.
- Magnetic separation then removed the iron oxide, leaving pyrochlore-zircon concentrate.
- Electrostatic separation tests, to separate pyrochlore from zircon, were not conducted but Mariano & Mariano report that separation should be readily accomplished because pyrochlore is a conductor and zircon is non-conductive.

A number of tantalum projects employ flotation to recover pyrochlore. To date, no flotation tests have been performed on Epembe material.

# **Planned Exploration Programme**

The following programme has been agreed for Phase 1 of the JV exploration programme:

- Geological mapping;
- Re-logging & re-assaying all previous drill holes;
- Drilling 8500m RC 7000m, diamond drilling (DD) 1500m;
- Metallurgy study;
- Preliminary resource assessment;
- Order of magnitude estimate;
- Environmental overview.

# **OTHER NAMIBIAN PROJECTS**

#### **Steinhausen Project**



Figure 8. Craton's Steinhausen tenements. Note location of prospects referred to in the text

A review of the discovery potential of the project area reached the following conclusions:

### Copper in pre-Damara strata (EPL 3590)

- Low grade copper, hosted by amphibolite and calc-silicate schist was intersected in previous (mainly 1970s) exploration.
- Craton's regional-scale soil geochemical surveys have identified a number of anomalies which are being followed up with detailed soil geochemical and geophysical surveys.
- The Klip prospect, offering potential for an Omitiomire satellite operation, will be drilled as soon as an access agreement has been reached.

#### Metals in layered complexes (EPLs 3590 & 4054)

• Soil geochemical surveys have indicated no significant anomalies.

#### Gold in sheeted quartz veins (EPL 4054)

- This is a new exploration concept, based on analogy with the Navachab gold deposit near Karibib (west of Windhoek).
- There is little rock outcrop in the EPL and thus a difficult exploration environment.

#### Copper in Damara strata (EPL 4150 & 4151)

- Previous (mainly 1970s) shallow drilling intersected copper at several prospects.
- The most promising of these is the Talana prospect, where previous drill intersections included 45m at 0.31% Cu and 15m at 0.55% Cu.
- Review of previous exploration is in progress.

### Massive sulphide copper in Matchless Belt (EPL 4151)

- Several known prospects of this style within EPL 4151 indicate very good discovery potential.
- Whilst most deposits of this style are small plunging bodies, there are some more substantial deposits, e.g. Otjihase (pre-mining) >25 Mt @ ~ 2% Cu & 0.5 g/t Au.
- Oxide copper caps on these deposits provide good potential as possible Omitiomire satellite operations.
- Review of previous exploration is in progress.
- Soil sampling and ground magnetic surveys conducted during the quarter have identified additional targets for follow-up.

# Kalahari Copperbelt Project



Figure 9. Craton's Kalahari Copperbelt tenements

<u>EPL 4039 Nomeib</u>: Exploration is targeting copper-gold in basement rocks. Targets defined from small-scale mine workings and geochemical anomalies are being followed up with detailed geological mapping, soil geochemistry and magnetic surveys.

During the quarter, outcrop sampling at two prospects returned high gold concentrations: Samkubis prospect – 10.4 ppm Au & 4.9 ppm Au; Opetjie prospect – 6.3 ppm Au (Figure 10).



Figure 10. EPL 4039: Opetjie and Samkubis prospects on background soil geochemistry. "Warm" colours show geochemical anomalies.

<u>EPL 3584 Rehoboth South:</u> At the Noams prospect, an 8-hole RC drilling programme intersected minor oxide copper near surface but failed to provide any indication of a substantial copper deposit.

<u>EPL 4055 Sib</u>: At the Sib copper-silver deposit, ongoing work included a detailed mineralogical study. As previously reported, most of the silver appears to be refractory. A preliminary financial study is in progress. Initial results indicated that, if silver cannot be recovered, the project would be marginally viable.

Regional-scale exploration has, to date, failed to identify other targets.



Figure 11. View of the Sib prospect area



# **Kamanjab Project**

Figure 12. Craton's Kamanjab tenements

<u>EPL 3372 Kopermyn</u>: As previously reported, drilling has failed to provide any indication of the presence of a substantial copper deposit. The tenement is to be relinquished.

<u>EPL 4296 Tzaus and EPL 4297 Vaalberg</u>: The lack of exploration success in EPL 3372 has downgraded the discovery potential for copper in the Damara Sequence.

Previous exploration showed the presence of low grade zinc in quartzite units within the Kamanjab Inlier. Craton considers that poorly-exposed and under-explored shale-siltstone strata have potential for stratiform zinc analogous to the Century deposit in the Mount Isa region of Australia.

Work during the quarter involved review and assessment of previous exploration and soil geochemical surveys.

#### **AUSTRALIAN PROJECTS**

#### Maranoa Resources Pty Ltd

During the quarter, an electro-magnetic (**EM**) survey was completed over the main aeromagnetic anomaly in EPM 14260 Darkwater. Although no outstanding anomalies have been delineated, interpretation of the data is still in progress.

EPM 14260 expired in mid-April, 2013. A renewal application was lodged in January 2013 together with a 50% reduction of area (from 50 to 25 sub-blocks) as required by the Queensland Government.

#### **Endolithic Resources Pty Ltd**

The Mount Isa tenement, EPM 18306 Gereta, is currently nearing the end of its first year of tenure. During 2012, review of previous exploration and a field reconnaissance identified a number of target areas to be followed up. Geological mapping and outcrop sampling are planned to commence during May 2013.

#### **AuriCula Mines Pty Ltd**

Exploration joint ventures on three tenements in the Cobar district of New South Wales are managed by Cobar Management Pty Ltd (**CMPL**), a subsidiary of Glencore Australia, which has submitted summary quarterly reports on the two project areas.

<u>Mount Hope Project (ELs 6907 and 6868)</u>: Field work during the quarter was restricted to environmental and Aboriginal Heritage studies in the Nombinnie State Conservation Area. Following this work, a Review of Environmental Factors (**REF**) was submitted to the Minister for the Environment to seek consent to explore within the conservation area. A key finding of the REF was that, due to the considerable number of Aboriginal Heritage sites, the cost of obtaining an Aboriginal Heritage Permit to carry out soil sampling was deemed prohibitive for initial field work. Ground

magnetic surveys, which do not require such a Permit, were selected in order to identify and prioritise targets for further work.

Shuttleton Project (EL 6223): During the quarter, CMPL continued a programme of geological logging and assaying of diamond core from four holes drilled in late 2012 to test geophysical (CSAMT) anomalies. Minor copper, lead, silver and zinc are reported. Further CSAMT surveying was conducted and indicated additional conductors to be tested by drilling.