

ABN 52 077 110 304

28 September 2011

# POSITIVE SCOPING STUDY FOR STAGE 2 SXEW AT KIPOI COPPER PROJECT HIGHLIGHTS SIGNIFICANT CASH FLOW POTENTIAL

# Preliminary Economic Assessment completed for a 50,000 tonnes per annum Solvent Extraction Electrowinning copper facility "SXEW"

Substantial cash flow potential based on projected low cash operating costs

# Highlights include:

- Average **annual production over life-of-mine (LOM) of 42,350t** LME grade A copper metal.
- Operating costs of US\$0.63/lb during initial three years (average US\$0.92/lb LOM).
- After-tax Internal Rate of Return "IRR" of 48% (Base Case)
- After-tax Net Present Value "NPV" of US\$272 million (using 11% discount rate and US\$2.36/lb copper price)
- **15 month payback** from the start of production of **initial project capital cost of \$151.4 million** (LOM capital cost, including sustaining capital, of \$422.4 million).
- Stage 2 development fully funded from Stage 1 free cash flow.

**Perth, Western Australia: Tiger Resources Limited (ASX/TSX code: TGS)** ("Tiger" or "the Company") is pleased to announce it has completed a Scoping Study (Preliminary Economic Assessment) for a Stage 2 solvent extraction electrowinning facility ("SXEW") at the Kipoi Copper Project (60%) located on the Katanga copper-belt in the Democratic Republic of Congo ("DRC").

Tiger Resources Managing Director Brad Marwood said "The results from the preliminary economic assessment underline the robust economics of the Kipoi Copper Project and this should add further value for our shareholders."

"The results are very encouraging and demonstrate that Kipoi has the potential to generate significant cash flow based on its projected low cash operating costs," Mr Marwood said.

The base case economic analysis uses analysts' consensus forecasts of the long-term copper price of \$2.36/lb over the Stage 2 project life, generating an after-tax IRR of 48% and NPV (11%) of \$272 million. Using copper prices of \$3.00 and \$3.50, the NPVs increase to \$437 million and \$593 million respectively, and the IRRs increase significantly to 57% and 69% respectively.

The existing infrastructure at Kipoi for the Stage 1 Heavy Media Separation ("HMS") facility acts as a capital springboard for the development of Stage 2. The HMS plant is expected to produce an average 35,000 tonnes per annum of copper in a 25% concentrate over its 39 month life, and will be superseded in mid-2014 by the Stage 2 SXEW Plant, which will produce LME Grade A quality copper cathode directly at the mine-site. Significantly, the Stage 2 operations will initially process residues from the HMS plant (containing approximately 4.8Mt at 3% Cu), which provides immediate feedstock to Stage 2 operations so that the mining schedule does not need to recommence until 2016.

Mr Marwood said "The Company's immediate aim is to further improve the Kipoi economics by expanding the resource, complete the feasibility study and move Stage 2 into development thus further up the value curve."

"It is important to note that the combined Kipoi Stage 1 and Stage 2 projects are fully funded on the basis of current average copper price projections," he said.

Mr Marwood added "The biggest potential impact on the Kipoi project value is likely to be realised through increasing the Mineral Resource base available as feed to the Kipoi infrastructure. This will potentially increase the mine life and/or annual plant throughput."

### Stage 2 Preliminary Economic Assessment

The preliminary economic assessment has been prepared based on the Scoping Study prepared by engineering consultants ARCCON Mining Services and incorporating the inputs of other specialist consultants. The Scoping Study objective was to provide capital costs and operating cost estimates for a Stage 2 facility at the Kipoi Copper Project with a plant circuit incorporating two separate 25,000tpa SXEW trains to be commissioned sequentially, based on:

- Mining schedule pit optimisations developed by Cube Consulting
- Processing plant flow sheet design and major equipment selection for processing of Stage 1 HMS residues and mined ore from Stage 2 mining schedule
- Tailings dam design and costing by Coffey Mining Pty Ltd

The cobalt present in the Mineral Resources has not been addressed in the assessment. This will be addressed over the coming months and announced separately.

# **Mineral Resources and Mine Plan**

The mining schedule compiled for the Scoping Study was based on all Kipoi Mineral Resources. Mining is scheduled to commence in the fourth year of Stage 2 operations, with sequential mining of Kileba and Kipoi Central phases 1 and 2, followed by Kipoi North and the satellite pits at Kipoi Central. Mining operations are proposed to commence during 2016, with first ore feed to the plant during 2017.

Pit optimisation studies were undertaken on the three principal deposits, namely Kipoi Central, Kipoi North and Kileba, and based on the following input parameters:

Copper Price	US\$2.30/lb
Mining Costs	as per current mining contract
Pit Slopes	minus 37° to 42°
Metallurgical Recovery	82.5% based on 80% recovery from heap leach and 90% recovery from tank leach.

The remainder of the input parameters have been taken directly from current operations at Kipoi. All primary mineralisation was assigned zero recovery for purposes of the optimisation analysis.

Table 1: Kipoi Open Pit Contained Mineral Resources

	Oxide Ore Tonnes	Copper % Contained Copper (Tonnes)		Strip Ratio
Kipoi Central	23,840,543	1.03	245,037	1.84
Kipoi North	3,979,800	1.46	58,192	4.28
Kileba	8,164,305	1.28	104,187	1.29

Economic open pit cut-off grades were estimated at 0.38% copper for Kipoi Central and Kipoi North, and 0.41% copper for Kileba.



Figure 1: Scheduled Annual Mining Schedule by Deposit and Phase starting in 2016 after the HMS stockpiles have been depleted.

#### Processing

The processing facility will be a conventional solvent extraction electrowinning (SXEW) processing plant capable of 50,000t per annum copper cathode production through two parallel streams.

Plant feed will be crushed and washed to separate the +300  $\mu$  fraction from the slimes and the fines. The +300  $\mu$  fraction will be sent to heap leach pads where recoveries are anticipated to be 80% of contained copper while the slimes and fines will be directly fed to a tank leach system where the anticipated recoveries will be 90%.

This allows flexibility in the process pathway offering options for high, medium and low grade ores. The HMS generates streams of feed material available for processing in Stage 2; 1.5 Mt floats at 3%, 0.9Mt slimes at 3%, and 2.4Mt medium grade at 2.6%.

The plant feed schedule will allow the HMS stockpile of the float rejects to be processed through the heap leach facility followed by the slimes processed through the tank leach facility. The medium grade stockpile developed during the first three years will then be depleted.

### Capital costs

Costs are estimated to an accuracy of +- 30% including contingency, are unescalated, include a 3% import duty, and are expressed in US dollars.

The breakdown of costs shown in Table 2 demonstrates \$151.4 million of cost to first production, with a total LOM capital costs, including sustaining capital, of \$422.4 million.

#### Table 2: Kipoi Stage 2 Project Capital Costs to Start Up

	US\$ million (to first production)	US\$ million Life of Mine (full cost)
Accommodation, power supply, initial heap leach pads	20.0	102.9
SX/EW train 1, 25,000tpa	69.2	69.2
Tank CCD circuit	19.6	78.3
SXEW train 2, 25,000tpa	42.3	84.6
Crushing and washing	-	15.1
Tailings Facility	-	22.9
Sustaining Capital	0.3	49.4
Total	151.4	422.4

### **Operating Costs**

Costs are estimated to an accuracy of +-30% including contingency, are unescalated, exclusive of duties and taxes, and expressed in US dollars.

The operating costs will be \$0.63/lb during the initial three years of operations, during which the stockpiles from the Stage 1 HMS operation will be treated. Thereafter, Run-of-Mine (ROM) material will be processed at an average operating cost of \$1.07/lb. **The average LOM operating cost is US\$0.92/lb.** 

The low gangue acid consumption of the Kipoi deposits, coupled with the low cost of electricity, results in process operating costs within the lowest quartile of industry standards.

#### Table 3: Operating Cost Summary (Initial 3 Years)

	US\$/a	\$/t ore	\$/lb Cu
Mining	-	-	-
Process Plant	45.182	27.11	0.41
General & Administration	11.400	6.84	0.09
Marketing & Product Transport	10.619	6.37	0.11
Export Costs	1.847	1.11	0.02
Total	69.048	41.43	0.63

#### Table 4: Operating Cost Summary (ROM)

	US\$/a	\$/t ore	\$/lb Cu
Mining	28.365	6.30	0.31
Process Plant	46.554	10.35	0.50
General & Administration	11.400	2.53	0.12
Marketing & Product Transport	10.619	2.36	0.12
Export Costs	1.847.	0.41	0.02
Total	98.785	21.95	1.07

#### **Economic Assessment**

The economic assessment was prepared using the expected capital and operating costs shown in Tables 2, 3 and 4. Modelling incorporates fiscal aspects of the DRC mining laws and conventions applicable to the Kipoi project, including:

- 30% DRC corporate tax rate
- 2% DRC state royalty
- 3% import duties
- 60% depreciation rate of capital expenditure (in year of occurrence and straight line thereafter)

# • 2.5% Gecamines royalty

A financial model was developed for a Base Case scenario using a long-term consensus copper price forecast of US\$2.36/lb. The results are shown in Table 5, together with the results of Upside Cases using copper prices of \$2.50, \$3.00 and \$3.50 to demonstrate a measure of the sensitivity of the project economics to copper prices.

Copper price	IRR	Net Free Cashflows	NPV (11%)	Payback (Initial Capital)
US\$/lbCu	(%)	US\$M	US\$M	Months
2.36	48	663	272	15
2.50	44	715	280	15
3.00	57	1,044	437	14
3.50	69	1,374	593	13

#### Table 5: Summary of Results

The above financial analysis excludes costs related to exploration, feasibility, financing and interest charges.

### **Project Implementation and Timing**

Tiger has already commenced preliminary work on a definitive feasibility study.

Metallurgical testwork sample selection, sampling and metallurgical laboratory selection has commenced, and metallurgical testwork is underway.

Programs for infill drilling leading to an upgrade of classification of Mineral Resources have commenced and will proceed over the next two years. It is anticipated that a feasibility study to support a project implementation decision will be completed during the first half of 2012.

Preliminary indications are that first copper cathode production can be achieved 24 months after project approval. Through meeting these timelines Tiger anticipates achieving a steady cash flow through the transition from Stage 1 to Stage 2 of the Kipoi Copper Project.

# **Project Opportunities – Exploration Upside**

The biggest impact on the Kipoi project value is likely to be achieved through increasing the Mineral Resource base available as feed to the Kipoi processing facilities, which potentially will increase the mine life and/or annual plant throughput. Tiger is therefore committed to active exploration programmes with anticipated programme costs in excess of US\$10 million.

Over the next two years Tiger plans to define all significant mineralisation within the Kipoi project area and undertake sufficient drilling to convert this mineralisation into Mineral Reserves.

At the same time Tiger will be actively pursuing opportunities to increase landholdings within economic haulage distance of the central processing facility at Kipoi.

Potential also exists to add to the resources at the 100%-owned Lupoto Copper Project just 25 km from Kipoi, where a maiden Mineral Resource was recently declared for the Sase Central deposit.

### **Technical report**

A Canadian NI 43-101 technical report on the Scoping Study is in progress and will be filed on the Company's profile on SEDAR within 45 days of this announcement.

### BACKGROUND

The Kipoi Project covers an area of 55 square kms and is located 75km north-north-west of the city of Lubumbashi in the Katanga Province of the DRC. The project contains a 12km sequence of mineralised Roan sediments that host at least five known deposits: Kipoi Central, Kipoi North, Kileba, Judeira and Kaminafitwe.

The Company has reported JORC-standard resources at three of the deposits. The principal deposit is Kipoi Central, which contains a zone of high grade copper mineralisation within a much larger, lower grade global resource.

The Company proposes a staged development at the Kipoi Copper Project. The high grade zone of mineralisation at Kipoi Central will be exploited during the Stage 1 development. During the three-year operation of Stage 1, 900,000tpa of 7% Cu is planned to be processed through a HMS plant with a recovery rate of 60%, to produce the equivalent of approximately 35,000tpa of copper.

The Company is currently undertaking a feasibility study to evaluate the economic viability of constructing a SXEW plant (Stage 2), targeted to come onstream within three years of the start of the HMS operation. It is envisaged that ore from Kipoi Central, Kipoi North and Kileba South and the other deposits within the Kipoi Project and within the nearby Lupoto Project would be processed during the Stage 2 phase.

For further information in respect of the Company's activities, please contact:

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# Company website: <u>www.tigerresources.com.au</u> Technical Information

Additional information on Tiger and its projects and operations is contained in technical reports filed under the Company's profile on the SEDAR website (sedar.com)

The Scoping Study (Preliminary Economic Assessment ("PEA")) for the Stage 2 SXEW is based on Indicated and Inferred Mineral Resources. The PEA is preliminary in nature and the Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorised as Mineral Reserves. There is no certainty that the outcomes described in the PEA will be realised. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The Indicated and Inferred Mineral Resources referred to in this announcement and pertinent to the PEA are reproduced below:

Category	Tonnes (Mt)	Copper grade (%)	Cobalt grade (%)	Ag grade (g/t)	Copper (000t)	Cobalt (000t)	Ag (000'oz)
Measured	9.18	3.78	0.14	3.68	347	13	1,085
Indicated	14.28	1.31	0.07	2.29	181	9	1,052
Measured &	23.46	2.28	0.09	2.83	535	22	2,138
Indicated							
Inferred	12.02	0.85	0.05	0.47	102	6	182

Appendix A: Kipoi Central deposit. (Grade tonnage reported above a cut-off of 0.50% copper)

Appendix B: Kipoi North and Kileba South Inferred Mineral Resource estimate. (Lower cut-off 0.5% copper)

	Tonnes (M)	Copper % Grade	Cobalt % Grade	Silver g/t	Copper (000't)	Cobalt (000t)	Silver (000oz)
Kipoi North	5.3	1.36	0.03	8.1	71.6	2.6	1,372
Kileba South	9.5	1.4			133		
Total	14.8	1.38			204.6	2.6	1,372

#### Competent & Qualified Person's Statement:

Information in this news release that relates to the Scoping Study has been prepared under the supervision of Mr John McCowan, a director and employee of Arccon (WA) Pty Ltd, a registered Professional Engineer of Queensland and a Professional Member of SME.

The mining engineering section of the Scoping Study, which includes open pit optimisation and production schedules, was prepared under the supervision of Quinton de Klerk, of Cube Consulting Pty Ltd. Mr De Klerk has

sufficient experience which is relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code and a "Qualified Person", as such term is defined in the Canadian National Instrument 43 – 101. Mr de Klerk has reviewed and approved the contents of this news release relevant to this section.

Scientific or technical information in this news release other than relates to the Scoping Study has been prepared by Mr Bradley Marwood, Managing Director and a full-time employee of the Company and a member of the Australasian Institute of Mining and Metallurgy ("AusIMM"). Mr Marwood has sufficient experience which is relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code and to qualify as a "Qualified Person" under Canadian National Instrument 43-101. Mr Marwood consents to the inclusion in this news release of the matters based on his information in the form and context in which it appears.

Scientific or technical information in this news release other than relates to the Scoping Study has been prepared by Mr Bradley Marwood, Managing Director and a full-time employee of the Company and a member of the Australasian Institute of Mining and Metallurgy ("AusIMM"). Mr Marwood has sufficient experience which is relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code and to qualify as a "Qualified Person" under Canadian National Instrument 43-101. Mr Marwood consents to the inclusion in this news release of the matters based on his information in the form and context in which it appears.

#### Caution Regarding Forward Looking Statements:

The forward-looking statements made in this report are based on assumptions and judgments of management regarding future events and results. Such forward-looking statements, including but not limited to those with respect to the Stage 1 mining operation and the planned Stage 2 mining operation at the Kipoi Project involve known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any anticipated future results, performance or achievements expressed or implied by such forward-looking statements. Such factors include, among others, the actual market prices of copper, cobalt and silver, the actual results of future mining, processing and development activities, changes in project parameters as plans continue to be evaluated, as well as those factors disclosed in the Company's filed documents.

There can be no assurance that the Stage 1 HMS plant will operate in accordance with forecast performance, that anticipated metallurgical recoveries will be achieved, that future evaluation work will confirm the viability of deposits identified within the project, that future required regulatory approvals will be obtained, that the Stage 2 expansion of the Kipoi Project will proceed as planned and within expected time limits and budgets or that, when completed, the Kipoi Stage 2 project will operate as anticipated.