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## 18 May 2011

# COMPREHENSIVE REVIEW OF ABU DABBAB PROJECT & PROJECT UPDATE

The Company is pleased to announce the results of a comprehensive review of the Abu Dabbab Project which commenced in the first quarter of this year following the departure of the Company's former CEO.

### 1. Change of Base Case Throughput Rate

Following detailed evaluation of alternative production profiles for the Abu Dabbab Project, the Company is pleased to announce that it intends to proceed with a change of scope for the Abu Dabbab Project from 2 million tonnes per annum ("Mtpa") of Run-of-Mine ore ("ROM") to 3 Mtpa of ROM.

At this rate of production, the average annual output of products is estimated to be approximately:

- 925 thousand pounds of tantalum oxide (Ta<sub>2</sub>O<sub>5</sub>) in slag;
- 2200 tonnes of tin as tin metal; and
- up to 2.4 Mtpa of feldspar.

Revised pit optimisation studies suggest a mine life of 13.5 years (refer below "Revised Pit Optimisation")

#### 2. Capital Cost Estimates

The Company commissioned its consultants, Lycopodium, to prepare a study to estimate the capital and operating costs for a 3 Mtpa project, based on the November 2008 feasibility study. This study was based on utilising the SynCon process (refer below "*Process Flow Sheet Review*").

This study was amended in January 2009 to take account of the decision to replace seawater with desalinated water throughout the plant. Whilst this process change increased initial project capital expense and marginally increased annual operating expenses, this increase was off-set by a substantial reduction in project sustaining capital expense associated with reduced tailings storage facility expenses.

In February 2009 comparative capital and operating expense estimates for alternative gravity concentrate processing routes (refer below "*HC Starck Off-Take Agreement*") were prepared by Lycopodium. These studies found that the capital and operating costs for the SynCon and the Conventional processes (refer below "*Process Flow Sheet Review*") were the same within the precision of the estimates.

In July 2009, Lycopodium prepared capital and operating expense estimates for 2 Mtpa and 3 Mtpa ROM treatment capacities.

In January 2011, Lycopodium updated capital expense estimates for the 2 Mtpa base case and updated operating expense estimates for both the SynCon and the Conventional processes.



The results of the studies are summarised as follows:

### Table 1

CAPITAL EXPENSE 2 MTPA	Date of Estimate		
	Sep-08	Jan-09	Jan-10
	US\$	US\$	US\$
Project Capital Expense	110,628,981	118,227,961	128,277,153
EPCM	17,221,400	17,221,400	17,221,400
Preproduction & Working Capital	16,810,523	16,810,144	16,810,144
Contingency	15,457,896	16,425,231	16,425,231
Total Capital Expense	160,118,800	168,684,736	178,733,928

Note: These estimates exclude financing charges during construction.

Table 2

CAPITAL EXPENSE 3 MTPA	Date of Estimat	е
	Jun-09	Jan-10
	US\$	US\$
Project Capital Expense	151,625,049	160,683,871
EPCM	19,287,968	20,364,921
Preproduction & Working Capital	17,709,605	18,555,694
Contingency	24,282,016	25,685,262
Total Capital Expense	212,904,638	225,289,748

Note: These estimates exclude financing charges during construction.

### 3. Capital Expense and Operating Expense Implications of a Change of Throughput Rate

The foregoing studies indicated that the capital cost per annual tonne of ROM ore processed is estimated to decline from approximately US\$89.40 per annual tonne processed to US\$75.10 per annual tonne processed.

These studies also indicated that unit processing costs would be reduced by approximately US\$ 1.11 per tonne ROM processed by increasing throughput from 2 Mtpa to 3 Mtpa.

### . Implementation Schedule

Lycopodium reviewed the project implementation schedule in May 2010 to take account of altered delivery times for major equipment items, particularly mills.

The study concluded that the project could be ready for commissioning within 18 months from appointment of the EPCM manager, with commissioning expected to take up to 4 months thereafter.

### Market Price for Tin & Tantalum

Between November 2007 (the date of the off take agreement ("OTA") with HC Starck ("Starck")) and March 2010, the quoted 'spot' price for tantalum oxide (source: metal-pages.com) moved in a narrow range of US\$40 to US\$50 per pound  $Ta_2O_5$  and the price of LME tin metal remained in the vicinity of US\$10,000 per tonne.



Over the past twelve months, the quoted 'spot' price for tantalum oxide has risen from less than US\$50 per pound  $Ta_2O_5$  to in excess of US\$120 per pound  $Ta_2O_5$ .

Similarly, in the twelve months to March 2011, the LME tin price rose from around US\$10,000 per tonne to in excess of US\$30,000 per tonne and has traded at over this price for the past three months.

### 6. Benefits from Change of Throughput Capacity

Benefits from changing the project annual throughput rate from 2 Mtpa ROM to 3 Mtpa ROM include:

- Expanding the scale from 2 Mtpa to 3 Mtpa provides the Company with the opportunity to sell up to 325,000 pounds per annum of Ta<sub>2</sub>O<sub>5</sub> at prevailing market prices, with the balance of 600,000 pounds delivered pursuant to the OTA;
- This approach would strike a balance between the Ta<sub>2</sub>O<sub>5</sub> price down-side protection and operating cost escalation protection afforded by the OTA and the up-side potential of selling production at market prices;
- Revenue from the sale of 600,000 pounds of Ta<sub>2</sub>O<sub>5</sub> pursuant to the OTA is expected to meet between 60 to 65% of project operating expense, whilst the terms of the OTA provide increased revenue to compensate for a corresponding proportion of any operating expense escalation;
- The increase in tin price of approximately US\$20,000 per tonne is equivalent, in project revenue terms, to a change in Ta<sub>2</sub>O<sub>5</sub> price in the order of US\$50 per pound;
- The Company is looking to secure forward price protection on tin, given the current tin prices in respect of up to 70% of its anticipated production for the first 3 to 5 years of production;
- In combination, the change of throughput capacity permits the Company to strike a balance between protection from adverse spot price changes and adverse escalation in operating expense and securing sufficient revenue to service and retire debt, whilst preserving the opportunity participate in any future escalation in the value of tantalum oxide and tin metal; and
- In addition, the change of throughput capacity has a beneficial effect on installed capital cost per tonne processed and unit operating expense, as outlined in the preceding section.
- 7. Revised Pit Optimisation

The Company has completed Whittle pit re-optimisations at both 2 and 3 Mtpa based on both Measured and Indicated (M&I) resources and Measured, Indicated and Inferred (MI&I) resources.

In each case a number of scenarios over a range of metal price assumptions were preformed.

The results indicate that the 3 Mtpa ROM option is superior to the 2 Mtpa ROM case on technical, economic and commercial (marketing) grounds.

Based on the total resource inventory and a range of metal-price assumptions, the optimised pit-shell over Life-of-Mine was estimated to contain:-



### Table 3 Summary Results of Pit Optimisation Studies

			low	preferred	high
In-Situ Mineable Ore		million tonnes	32.1	38.7	41.5
Dilution			5%	5%	5%
Thru-put		million tonnes per annum	3	3	3
LOM		years	11.2	13.5	14.5
Average In-Situ Grade*	Ta <sub>2</sub> O <sub>5</sub>	%	0.027	0.026	0.025
	SnO <sub>2</sub>	%	0.130	0.120	0.114
Recovered to Product**	Ta <sub>2</sub> O <sub>5</sub>	million lbs	10.9	11.7	12.3
	Sn	thousand tonnes	22.6	24.0	24.4
LOM Waste : Ore			1.1	1.4	1.6
Mass Conversion of Reso	ource Inve	ntory to ROM***	72%	87%	93%

Note: The associated open pit goes to RL 100 (which is expected to place the final pit floor some 300 metres below the uppermost pit rim)

- \* assumes that the Inferred Resources (all of the current resource below RL 230) will convert to ore reserves as mining proceeds
- \*\* based on Bankable Feasibility Study overall recoveries from ROM to product.
- \*\*\* based on the resource inventory as at September 2010 and as disclosed in the Company's Annual Report for the year to 30 June 2010.

Realisation of the results will depend on the successful conversion of Inferred Rsources to Measured and Indicated status without reduction of tin and tantalum grades and volumes. This will depend on the outcome of further drilling to be conducted at a later date.

The pit optimisation assumed:

- nil contribution to net cash flow revenue from the co-production of feldspar; and
- an overall 5% mining dilution, notwithstanding that grade control and selective mining are only rarely required at the margin of the deposit.

Accordingly, the bases for the study are considered to be conservative.

The Company is pleased to announce it has commissioned a 3 Mtpa pit design and associated updated ore reserves statement and related mine production schedule.

#### . Process Flow Sheet Review

Following review of process alternatives and corresponding forecast product specifications, the Company has decided not to proceed with the SynCon route for the production of high grade tantalum oxide for the Abu Dabbab Project.

The process flow sheet will comprise conventional gravity separation after crushing and grinding of the ROM to produce a primary gravity concentrate.



The proposed SynCon process involves direct smelting of the primary gravity concentrate in four successive smelting stages to produce tin metal, a high tantalum oxide grade "Synthetic" concentrate ("SynCon") as well as reject slag and a ferrous by-product.

The alternative process scheme (the "Conventional" process) is one where the primary gravity concentrate will be subjected to two-stage acid leaching to reduce manganese, uranium, thorium levels prior to processing of the leached gravity concentrate by conventional electro-magnetic ("EM") separation techniques to remove a high zirconium product and produce a combined tin-tantalum EM plant product.

The combined tin-tantalum EM plant product will constitute feedstock for conventional two-stage submerged arc tin smelting to produce tin metal and tantalum oxide containing slag complying with typical minimum tantalum oxide grades for internationally traded material of this type.

The decision not to proceed with the SynCon route for the Abu Dabbab Project was predicated on a number of considerations, including:

- Both process routes produce readily marketable materials, and in particular, both processes are expected to produce tantalum oxide products which will not be classified as an International Maritime Organisation (IMO) Class 7B radioactive material;
- The expectation that SynCon would constitute a higher-priced product compared with lower tantalum
  oxide grade slags produced by conventional two-stage smelting, in turn based on the expectation
  that such material would provide material cost advantages to the processors of tantalum containing
  materials in general and HC Starck, with which the Company has an off-take agreement, in
  particular, has not been realised;
- The Conventional processing of the primary gravity concentrate utilises simple unit processes that are well understood and have been demonstrated in comprehensive metallurgical test work programs conducted by the Company and the two-stage smelting process is well understood and has been standard practice in comparable operations for many years including at the Greenbushes tin-tantalum operations and at the Thaisarco tin smelter;
- The overall process flow sheet of the Conventional process, by using simple and well understood unit processes, is regarded as entailing considerably less process risk and uncertainty compared with the SynCon process, which has not been demonstrated in commercial operations;
- The estimated capital expense for the two alternative processing routes for the treatment of primary gravity concentrate were the same, within the precision of the estimates;
- The estimated operating expense for the two alternative processing routes for the treatment of primary gravity concentrate were, within the precision of the estimates, the same, however the operating expense for the "SynCon" route is sensitive to fuel price and therefore the Conventional process poses less risk in terms of possible future operating cost escalation; and
- Whilst the SynCon process was estimated to entail lesser loss of tantalum values to process waste streams as compared to the Conventional process, the differences in recovery to saleable products were estimated to be marginal and subject to close and careful control of a technically and operationally more challenging process and thus such benefits may have been difficult to obtain in practice.
- 9. Impact of Change of Throughput on Environmental Approvals

The Company has been advised by its consultants, Environics, that it will not be necessary to seek further approvals over those already obtained.



### 10. Feldspar By-product

The Company commissioned a scoping study to evaluate the capital and operating expense for a feldspar flotation plant to treat gravity circuit tailings in October 2006. This study indicated a capital expense of approximately US\$60 million including a 20% contingency allowance. As a major component of the estimated capital expense is that associated with the establishment of appropriate port and ship-loader facilities and related infrastructure, the overall capital expense related to the production of saleable feldspar and its export is expected to be relatively insensitive to production capacity,

Prior to 2008, the Company conducted in-plant trials with end-users. The results indicated that Abu Dabbab material demonstrated superior colour shift and melting characteristics compared with competitor materials.

Turkey is the major supplier of export, seaborne feldspar to European and other markets and produces between 3.8 and 5.0 million tonnes per annum (Industrial Minerals, January 2009) with the major destination market being Italy which is thought to import around 3 million tonnes per annum.

At the instigation of the Chairman, Ian Gandel, the Company:-

- commissioned follow-up metallurgical test work in January 2010. This program was completed in July 2010 and confirmed that a marketable feldspar product could be produced by simple flotation of de-slimed gravity circuit tailings for an overall recovery of between 75 and 80%.
- conducted initial marketing campaigns in 2010 which resulted in receipt of expressions of interest for 700,000 tonnes of material with indications for possible additional demand of 600,000 tonnes from the same end-users.

The Board also became aware that the Company had retained the services of a marketing agent in Europe to assist it in identifying other potential end-users for Abu Dabbab material after the departure of the former CEO.

Based on indicative FOB prices offered and present operating cost estimates, the cash operating margin for the production of a feldspar by-product could be between US\$20 and US\$25 per tonne of feldspar.

Whilst the Company is encouraged by the expressions of interests it has received, the Directors believe that market penetration of the Company's feldspar product may take time. The Company believes that sales from this part of the business will start slowly and build progressively.

### 11. SynCon Process Development

Notwithstanding the decision of the Company to adopt the Conventional process route for the processing of Abu Dabbab ore, the Board has decided that continued research and development, including if appropriate pilot-plant scale demonstration, may represent a commercial opportunity for the Company.

Commencement of the previously announced process development program has been delayed whilst the Company addressed matters relating to the ownership of intellectual property rights, which issues had not been previously addressed.

The Company is pleased to announce that, subject to contract, it has reached agreement with the principal consultant pursuant to which the Company:

- will own all intellectual property as may result from continued research and development funded by the Company; and
- will be granted a world-wide, royalty free, non-exclusive right to the use of the Consultant's background technology to the extent necessary.

A summary of the material terms will be announced following execution of an agreement by all parties.



### 12. HC Starck Off-Take Agreement

Tantalum Egypt and HC Starck entered into an off-take agreement ("OTA") on 2 November 2007. Key provisions include a 10 year term and an annual off-take volume of 600,000 pounds of tantalum oxide.

Under the OTA, contract price is comprised of two elements, being:-

- a base price, which moves within a defined floor price and ceiling price in accordance with prevailing market price and which is adjusted quarterly, and
- a base price escalation, which takes into account changes in project operating and sustaining capital expenses, and which price escalation is determined annually.

Negotiations leading up to agreement between the parties were underpinned by capital and operating cost estimates contained in a feasibility study update prepared in April 2007, being an update of an earlier feasibility study prepared in November 2004.

Based on the capital and operating cost estimates contained in the April 2007 update, the floor price was set at a level which, in conjunction with the then prevailing tin price, was regarded as sufficient to ensure economic feasibility, and in particular, was regarded as sufficient to secure debt finance.

Following execution of the OTA, the Company entered into negotiations with the German banks KfW IPEX-Bank GmbH ("KfW") and DEG-Deutsche Investitions und Entwicklungsgesellschaft mbH ("DEG"). Coffey Mining Ltd ("Coffey") was appointed by KfW and DEG as the Independent Technical Expert for the Project.

In March 2008, the Company announced that it expected 80% of the capital cost for the project, at that time estimated to be US\$125 million including financing during construction, to be debt funded.

In June 2008, the Company announced the appointment of a Senior Project Co-ordinator to oversee the detailed engineering, construction and commissioning phases of the Company's Abu Dabbab project.

By July 2008, the Company had completed a reverse circulation (RC) and diamond drilling programme which resulted in the upgrade of a substantial portion of the Indicated and Inferred Resources to the higher Indicated and Measured categories.

In September 2008, the Company released a new Ore Reserve statement for the Abu Dabbab project, which increased ore reserves from 14.60 million tonnes to 30.24 million tonnes, grading 255g/t Ta<sub>2</sub>O<sub>5</sub> and 0.109% Sn with the total Mineral Resources expanding to 44.5 million tonnes.

Also in September 2008, the Company announced that legal due diligence on behalf of the prospective debt financiers was nearing completion and that negotiations with several engineering groups for the Abu Dabbab Engineering, Procurement, Construction Management (EPCM) contract was expected to be executed between the Company and the successful engineering group prior to the end of October 2008.

In late November 2008, the Company announced the completion of a definitive feasibility study prepared by engineering group, Lycopodium. This study revised the estimated total capital expenditure to US\$173 million (including financing costs during construction) an increase of approximately US\$48 million over the previous November 2007 estimate.

This definitive feasibility study also significantly revised upward the estimated annual operating expense.

Also in November 2008 the Company announced the independent technical due diligence review of the definitive feasibility study by Coffey Mining on behalf of KfW and DEG has been completed (and which identified "no fatal flaws").

At the same time, the Company announced adoption of the SynCon process and the results of preliminary laboratory and in-plant test work undertaken in Italy and in Australia in relation to the production of ceramic grade feldspar from the plant tailings.

In the light of the revised capital and operating expense estimates prepared by Lycopodium and in the context of the lower tin prices then prevailing, in February 2009 the Company and Starck embarked on a



series of discussions and negotiations regarding the terms of the OTA and considered a number of options with a view to securing an acceptable outcome for both parties.

In the first half of calendar 2009 the parties considered and evaluated a number of technical options with a view to reduce capital and operating expenses. Options evaluated included the production of a tintantalum concentrate only and the potential impact of a change of production scale. The Company also sought to renegotiate the OTA terms in part on the basis of offering SynCon.

In early 2009, the Company encountered serious financial difficulties which were in part addressed in April 2009 when the Company obtained a funding facility from Abbotsleigh Pty Ltd, a company associated with Mr Ian Gandel, for an advance of A\$800,000 and which were finally resolved with a renounceable rights issue to all shareholders fully underwritten by Gandel Metals Pty Ltd (as trustee for the Gandel Metals Trust), a company controlled by Mr Ian Gandel announced on 28 August 2009.

In the period after August 2009 and up to June 2010, the Company and Starck engaged in unsuccessful discussions aimed at arriving at mutually acceptable variations to the terms of the OTA.

In July 2010, Starck affirmed the contract and all of its terms.

In January 2011, the Company commenced a re-evaluation of the Abu Dabbab project which is the subject of this announcement.

### 13. Financial Analysis

The Company previously announced the appointment of risk and financial advisors, Noah's Rule, to assist in fund raising and financial structuring for the financing of the development of the Abu Dabbab tin-tantalum-feldspar project.

The Noah's Rule team of banking, treasury and industry trained professionals, is well placed to assist the Company in securing project development finance.

Noah's Rule is presently carrying out comprehensive financial modelling and sensitivity analyses in relation to alternative project profiles, including:

- 2 and 3 Mtpa operations producing only tin and tantalum products; and
- 2 and 3 Mpta operations producing tin, tantalum and feldspar products.

The purpose of these studies is to confirm the results of detailed in-house financial modelling already completed.

The Company will announce the results of Noah's Rule's financial studies upon completion and review.

#### 14. Project Finance

The Company, together with Noah's Rule, is presently seeking to secure a structured financing package for the implementation of the project. Whilst it is premature to speculate as to the elements of such a package, it is possible that the package will include some form of tin price hedging linked to a form of debt as well as equity.

If the Company successfully secures a structured financing package or a conventional project financing package predicated on tin price hedging, it may obviate the need for finance such as that contemplated previously with KfW, which is linked to the delivery tantalum bearing materials into Germany pursuant to the OTA. The Company does however intend to continue discussions with KfW in conjunction with H C Starck.

The proposed spin-out of Gippsland's non-Egyptian explorations assets to Adobha Resources Limited, which has been the subject of prior announcements, is to be undertaken in part to facilitate the process of securing appropriate financing for the Abu Dabbab project.



### 15. Further Flow Sheet Optimisation

At Abu Dabbab, tantalite minerals have grain sizes averaging 10 - 100 microns with individual grains up to 600 microns whilst cassiterite grain sizes were typically 30 - 300 microns.

Considerable metallurgical test work was conducted between 2002 and 2007. Much of this work was directed at reducing 'sliming' of 'fragile' tin and tantalum minerals in the grinding circuit that inevitably occurs with grinding of all hard-rock tin and tantalite ores.

A 2006 progressive grind test work programme highlighted the significant benefits in stage grinding of the Abu Dabbab ore. The selected flow sheet utilises stage grinding with the closed circuit milling installation essentially comprising multiple grinding stages with product size material being removed at each stage by using two-stage cyclone classification ( $P_{80}$  150 microns and  $P_{80}$  90 microns) for improved efficiency. The flow sheet was modified to include a gravity step within the milling circuit to recover coarse liberated values. The test work indicated an overall recovery of 57.4% Ta<sub>2</sub>O<sub>5</sub> and 68.9% SnO<sub>2</sub> for the gravity circuit.

The balance of the tin and tantalum values are lost to tailings as a consequence of 'sliming' of tin and tantalite minerals during grinding to sizes too fine for recovery in a gravity circuit. The Company has previously commissioned flotation test work, the results of which were not sufficiently encouraging to warrant continuation.

In view of the increased value of tin and tantalum oxide, the Company recognises that there may be opportunities to improve overall recovery of these minerals to saleable products and to that end intends to commission a program of review of present practice and laboratory test work to evaluate the technical feasibility of recovery of fine tin and tantalite from the gravity circuit tailings stream.

### 16. Trial Mining of Alluvial Tin at Abu Dabbab

The trial mining program announced by the Company in March 2011 is on-going. The Company expects to be able to provide an update of progress by early June 2011.

#### 17. Exploration at Nuweibi

The resources at Nuweibi have been estimated by Gippsland (Chisholm 2003) using the ore block modelling (inverse distance squared) method at a 0.01%  $Ta_2O_5$  cut-off.

Table 4:	Nuweibi	mineral	resources
	14446101	minora	100001000

Category	Million tonnes	Ta <sub>2</sub> O <sub>5</sub> (%)
Indicated Resource	48	0.0147
Inferred Resource	50	0.0138
Total all categories	98	0.0143

The Company intends to commence Reverse Circulation drilling at the Company's Nuweibi tantalum project in the second half of 2011 and will be providing an update in due course.

Jan Candel

I G Gandel Chairman Gippsland Limited www.gippslandltd.com



#### Note:

In accordance with Listing Rule 5.6 of the Australian Stock Exchange Limited, the geological information in this report that relates to Exploration Results, Mineral Resources and Ore Reserves is based on data compiled by Dr John Chisholm, a Fellow of The Australasian Institute of Mining and Metallurgy. Dr Chisholm has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Chisholm consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.