

3 August 2011

### **IMPLEMENTATION OF ABU DABBAB ALLUVIAL PROJECT APPROVED**

The Directors of Gippsland Limited ("Gippsland" or "the Company") [ASX:GIP, FRA: GIX] are pleased to announce the completion of a comprehensive engineering study and economic evaluation of the opportunity to develop the Abu Dabbab alluvial tin deposits (the "Abu Dabbab Alluvial Project").

The Directors are satisfied that the results of the trial mining program are sufficiently robust to permit immediate project go-ahead and they are pleased to announce that they have formally approved implementation of the Abu Dabbab Alluvial Project at the earliest opportunity subject only to approval by the Board of Tantalum Egypt JSC ("TE") and finalising financing arrangements.

Subject to the satisfaction of these conditions, mining operations are expected to commence in early September with processing operations scheduled to commence late December or at the start of the first quarter 2012.

Two alternative processing approaches (the "Batch" and "Continuous" processes) were studied in detail. Following comprehensive process simulation and detailed financial analysis of the alternative process flow sheets, the Continuous process route was selected with the Base Case scenario involving the gravity plant processing of only high grade feed stocks and the stockpiling of lower grade materials for later treatment or processing through the Abu Dabbab hard rock plant in due course. Under the base case, processing operations will be completed within seven months from the start of operations.

For the Base Case, the capital and pre-production mining costs are estimated to total US\$4.3 million.

For the Base case, Net Project Cash Flow after the repayment of capital costs are estimated to be US\$7.3 million with payback at the end of the third month after the start of processing operations. For the purpose of calculating cash flow, the realised price for tin-in-concentrate was assumed to be US\$21,600 per tonne, representing a discount of approximately 20% to the prevailing tin metal price of approximately US\$27,500 per tonne. The key financial assumptions underpinning the economic evaluation are presented below. Should one or more of these assumptions not be achieved the project returns may differ substantially from the estimates.

Following repayment of all project related finance and Gippsland shareholder loans, profits will be distributed by way of quarterly dividends paid in the proportion Gippsland 45%: EMRA 55%. The project and TE are exempt from Egyptian taxation as are dividends paid by TE to Tantalum International Pty Ltd which is Gippsland's wholly owned subsidiary company which holds the Company's interests in TE. Gippsland's interest in Project Cash Flow after repayment of all project related finance is estimated to be between US\$6.6 and 6.8 million.

In arriving at the estimated project cash flow:

- no provision was included for residual plant value at project completion;
- no value was attributed to the opportunity to exploit other alluvial tin deposits already identified by the Company;
- no value has been ascribed to mineralised materials that will be stockpiled and which material is available for future treatment through the nearby Abu Dabbab hard rock plant; and

- no value has been ascribed to the stockpiled screened materials which are expected to be utilised as construction materials for the hard rock plant TSF.

### ***Project Design Considerations***

The broad design considerations underpinning the conceptual project and process design were:

- A nominal project duration of 12 months, which was considered to provide for a reasonable balance between economies of scale, capital expense and the overall requirement that the project be completed within the construction period of the Abu Dabbab hard rock project;
- a target cassiterite concentrate product suitable either for direct sale or an intermediate product of sufficient grade to economically transport for further toll treatment elsewhere (if required);
- use of contractors to provide mining and other services in order to minimise capital expense, in particular selective mining, load & haul operations, dry-screening, stockpile management and (if required) crushing services;
- location of all plant & equipment in the field to obviate haulage of plant feed and tailings.

Within these broad project design parameters, the over-riding considerations in arriving at a preferred approach to the mining and processing of the alluvial deposits were:

- flow-sheet simplicity;
- minimum duration and rapid implementation;
- priority mining of higher grade materials and priority treatment of gravity plant feedstock according to feedstock grade and/or recoverability in order to maximise early project cash flows;
- minimum capital expense and minimum investment in infra-structure, for example minimising investment in water supply by relying on purchased fresh water and by locating processing plant at the mine site;
- ability to simply and inexpensively relocate plant and equipment for the future exploitation of such other deposits as the Company might secure; and
- the stockpiling of intermediate materials not amenable to simple gravity processing for later processing and/or retreatment through the nearby Abu Dabbab hard rock plant in due course.

### ***Geology & Resource Estimates***

A review of exploration of the Abu Dabbab alluvial deposits, resource estimation and a classification of the mineral resource estimate in accordance with the Australasian Code for Reporting of Mineral Resources and Ore Reserves, December 2004 (The JORC Code) has been previously published and is summarised in **Table 1**.

**Table 1 Abu Dabbab Resource Summary**

Area	Mineralised Overburden  (BCM)	Mineralised Layer  (BCM)	Contained Cassiterite in Mineralised Layer  (t)	Contained Tin**  (kilograms)
Wadi Quaria	293,630	262,770	724	566,000
Wadi Mubarak	146,290	175,120	248	193,500
<b>TOTAL</b>	<b>439,920</b>	<b>437,890</b>	<b>972</b>	<b>759,000</b>

\*\* tin contained in the mineralised layer. The resource summary was announced on 31 January 2011. Totals may not match due to rounding.

### ***Trial Mining***

A program of trial mining and processing commenced in April 2011 for the purpose of confirming grade estimates and recoverability. This program has been the subject of previous announcements and the program is continuing.

### ***Selective Mining and Mine Schedule***

All of the material to be mined is comprised of 'free-dig' unconsolidated gravel.

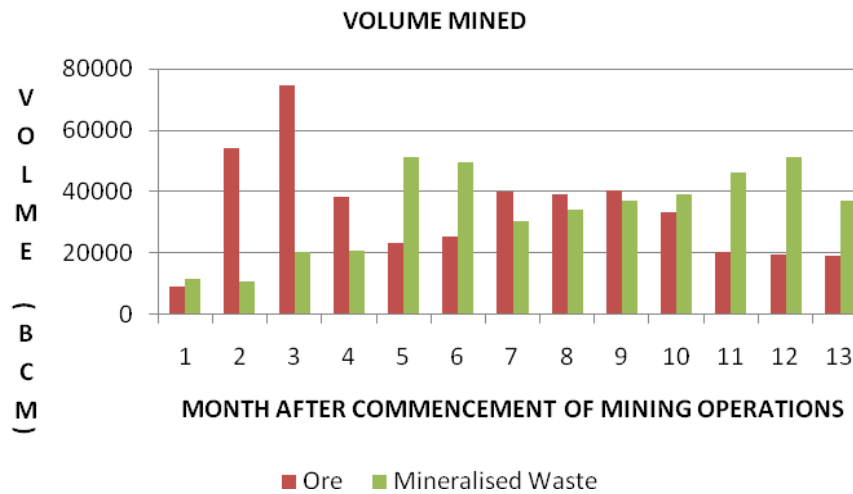
A sharp grade demarcation between the mineralised waste and 'ore' zone in the profile indicates that selective mining could reduce the volume of material to be processed by approximately 50%. Accordingly it is proposed to selectively mine mineralised waste and 'ore' with the mineralised waste stockpiled for possible treatment in the latter stages of the Alluvial project or in due course as feed stock for the Abu Dabbab hard-rock plant.

A mine schedule was developed within the overall criteria of a 12 month project duration with priority given to mining of higher grade blocks.

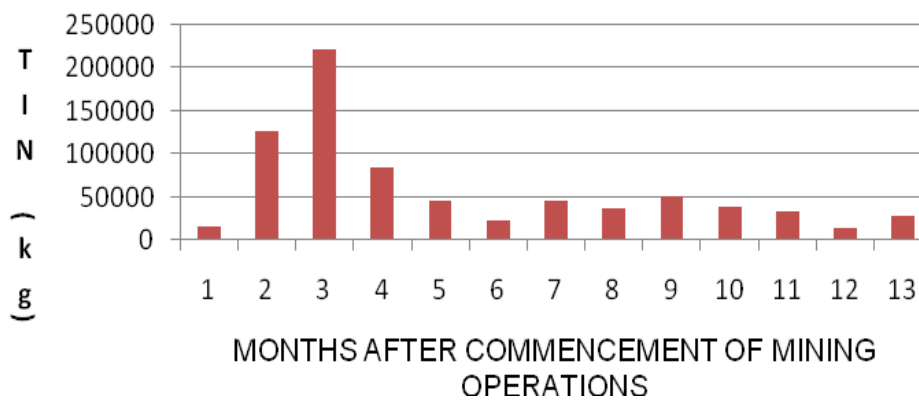
Commencement of mining operations will be dictated by timing of the commencement of Gravity Plant operations, which in the case of the preferred approach would commence in Month 7 with mining operations commencing in Month 1.

The proposed mine schedule is summarised in **Figure 1** whilst production estimates for tin metal contained in the 'ore' fraction are presented in **Figure 2**.

**Figure 1 Project Mining Schedule**



**Figure 2 Monthly Production of Tin Contained in "Ore"**  
 Tin in 'Ore'



***In-Field Contract Screening***

The selective department of tin to finer size fractions provides a simple and effective approach for pre-concentration of 'ore' to be utilised as Plant Feed, as is illustrated in **Table 2**.

**Table 2 Mass and Tin Distribution in "Ore" by Size Fraction**

Size Fraction (mm)	Distribution		Project Total		Grade kg tin/t	In Situ Value* US\$/t
	Mass (%)	Tin (%)	Material tonnes	Contained tin** (kg)		
+20 mm	24.3	0.0	170,252	0	0.00	0.00
-20+10 mm	24.0	7.7	168,150	59,039	0.35	8.92
-10+4 mm	15.8	15.8	110,699	121,146	1.09	27.80
-4 mm	35.9	76.5	251,524	586,560	2.33	59.23
Totals	100.0	100.0	700,624	766,746	1.09	27.80

\* @ US\$25,400 per tonne tin.

\*\* contained tin was calculated from the detailed mine schedule. Total does not match Table 1 due to rounding.

**Table 2** indicates that:

- screening at 20 mm is effective in reducing the potential Gravity Plant feed stock without loss of tin values;
- screening at -10+4 mm provides a simple and inexpensive method for a very significant increase in Gravity Plant feed grade;
- further pre-treatment of the -20+10 mm size fraction is likely to be only marginally attractive and stockpiling this material for future processing in the Abu Dabbab hard-rock project is likely to be the preferred approach.

Provided present assumptions as to grade of mineralised waste, mass distribution by size fraction and tin department are confirmed, the indicative average grade and in-situ value of the finer size fractions of the mineralised waste are as set out in **Table 3**.

**Table 3 Indicative Grade and In-situ Value of Mineralised Waste Size Fractions**

Waste Size Fraction	Size Fraction Mass (tonnes)	Contained tin (kg)	Grade (kg tin/ tonne)	In Situ Value (US\$/tonne)*
-10+4 mm	111,212	10,232	0.092	2.34
-4 mm	252,690	49,540	0.196	4.98

\* @ US\$25,400 per tonne tin

**Table 3** suggests that screening of mineralised waste to produce -4 mm Gravity Plant feed stock may be marginally viable but that further processing of coarser size fractions is unlikely to be viable.

### ***In-Field Contract Crushing***

In-field crushing for preparation of plant feed material would involve crushing of the -20+10 mm 'ore' size fraction in the case of the preferred process.

Contract crushing operations (if economically viable) would commence once sufficient crusher feed stock has been accumulated and as dictated by Gravity Plant feed stock scheduling requirements.

### ***Stockpile Management***

Selective mining, screening and crushing operations impose significant demands on stockpile management and significant costs in stockpiled material rehandling.

### ***Process Options***

Two alternative approaches to the processing of the Abu Dabbab alluvials were evaluated in detail in this study (with the Continuous Process Option as preferred), being:-

- the Continuous Process Option using conventional gravity plant & equipment.
- the Batch Process Option, which would involve single stage sequential batch processing using a single unit process with intermediate product stockpiling.

Sufficient engineering and process design was undertaken for each Process Option to enable:

- determination of all key technical parameters;
- capital costs estimation based on vendor quotation;
- operating costs estimation on the basis on contractor quotation on the basis of man-power and consumables schedules developed in-house,
- development of implementation schedules based on vendor equipment delivery schedules,
- preparation of monthly feed stock processing schedules for three different feed stock scenarios for each of the two process flow sheet alternatives, and
- feed stock processing schedules to determine the commencement of mining operations and scheduling of screening and crushing operations.

### ***Project Activities Schedule***

In scheduling the mining operations, the following basic operating parameters were assumed:

- Commencement of mining activities being dictated by the need to maintain a minimum stockpile of ore feed to the screening facility and the mine production schedule, which in turn was designed based on a mining rate consistent with the mining of all of the ore and waste in a nominal 12-month time frame;
- Commencement of ore screening activities determined on the assumption that screening capacity is 100,000 tonnes per month and that a sufficient stockpile of feed materials was available for plant feed;
- Crushing activities (if warranted) commencement predicated on a crushing rate of 28,000 tonnes per month with commencement dictated by the need to maintain adequacy of supply of crushed and screened product to meet process plant feed requirements whilst ensuring that crusher operations are at full capacity once commenced; and
- In all cases, mining, screening and crushing operations maintain full operating capacity whilst required.

## ***Process Selection Considerations***

### *Operational Considerations*

Operationally, the major advantage of the Batch Process Option flow sheet is that the same item of equipment is used for each sequential stage of the process and available equipment can be configured to assume any of the duties as dictated by available feed stock. This permits available productive units to always be used to treat the highest available grade feed stock, the practical implication being that equipment is used initially in a Rougher-Cleaner-Recleaner (Phase 1) configuration in order to maximise the rate of final concentrate output into the early phase of the project and deferring the re-treatment of lower grade intermediate products (in particular Rougher Tailings) until all higher grade feed stock has been exhausted. By adopting this approach it is possible to recover about 70% of the maximum total project tin output within 12 months of commitment (noting that the first production units are operational in Month 5 and full capacity is not reached until Month 9). By comparison, processing operations under the Continuous Process Option do not commence until Month 7 after commitment, however once operational, the duration of operations is shorter under this option.

Operationally the major disadvantage of the Batch Process Option flow sheet is that it involves very significant tonnages of intermediate product stockpiling with attendant significant material rehandling in stockpiling, stockpile recovery and plant feeding.

### *Process Risk*

The Continuous Process Option is based on a conventional jig-spiral circuit with the latter configured in a standard Rougher-Scavenger-Cleaner-Recleaner manner. This equipment and configuration is standard practice for the recovery of alluvial tin and other high specific gravity (heavy) minerals. As such the only potential process risk is inadequate liberation of cassiterite from gauge minerals.

Under the Batch Process Option process design concept, the gravity plant will comprise a series of modular mobile gravity plants which are similar in design and operation as the mobile gravity plant presently being used in the trial mining program. The ability for this equipment to recover cassiterite from the Abu Dabbab alluvials has been demonstrated. Nevertheless, the use of this equipment in the manner proposed is new.

### *Relative Operating Cost Sensitivity*

The two processing Options have a broadly similar operating cost profile, save and except that Batch Process Option involves additional contract crushing requirements, entails considerably more stockpile material movement using load and haul or tramping and involves greater water usage. To that extent the financial performance under Batch Process Option is relatively sensitive to contract load & haul rates and water consumption & pricing compared with Continuous Process Option.

### *Overall Financial Outcome & Duration*

The results of detailed modelling indicated that the financial performance of the project is marginally better under the Continuous Process Option and project duration is shorter when comparing like-for-like in terms of overall tin recovery and materials processed.

### *Disassembly & Relocation*

Under the Batch Process Option process design concept, the 'wet' plant would comprise a series of modular mobile gravity plants which are similar in design and operation as the mobile gravity plant presently being used in the trial mining program. Such plants are available "off-the-shelf" at

reasonable costs per module. These modules are containerised for long distance transport and easily relocated using a trailer for short distances.

Using modular, mobile plant considerably reduces equipment delivery times, eliminates the need for site preparation and obviates the cost and time for installation. It also provides the opportunity for capital cost recovery at the end of the project and facilitates the relocation of the process plant to other sites. Production rates can be varied at will by varying the number of production units employed. Routine maintenance simply involves taking an individual unit off-line without impacting overall operations. In terms of future disposal, each unit could be sold separately. As the plant consists of a number of identical units, the variety and number of maintenance spares required is relatively low.

Under the preferred Continuous Process Option concept, the plant is in effect an integrated plant housed in separate structural modules. The plant is pre-fabricated and pre-assembled at the manufacturer's site, then disassembled for containerised transport and reassembly on site. Erection requires relatively more site preparation and relocation of the plant and equipment would require complete disassembly and reassembly at a new location. In terms of maintenance, any specific unit failure or maintenance would take the plant off-line. As the plant consists of a number of different components, the variety and number of maintenance spares required is relatively higher.

### **Operating Costs**

#### *Mining and Screening Operations*

To reduce project capital cost, it is intended that mining, on-site dry screening, stockpile management, load and haul to the processing plant and in-plant stockpile retrieval as well as campaign crushing will be done by contractors. Quotations for this work have been received from the contractor presently engaged by the Company.

#### *Water*

Operations conducted in the field must use fresh water in order to avoid possible ground water contamination. Consistent with the driving concepts to minimise capital expense and maximise operational simplicity, it is intended to rely on external service providers to the extent possible. In that context, it is not intended to establish an on-site desalination facility. Instead, it is intended to rely exclusively on purchased water.

For the purpose of estimating operating expense, it has been assumed that process tailings will retain 20% moisture by weight after dewatering and stockpile drainage. In view of the sandy nature of all of the material and the virtual absence of fine material, this is regarded as achievable.

Water consumption was calculated on the basis of total gravity plant throughput. Because the Batch Process Option involves stockpiling of intermediate products the aggregate water consumption for this option is significantly higher for each scenario than for the corresponding Continuous Process Option Scenario. The economic evaluation was based on water priced at US\$3.00 per kilolitre delivered to site as per supplier quotation. Availability and capacity to supply the project has been confirmed.

At full capacity under the preferred Option, the Gravity Plant requires 13,400 kilolitres of make-up water per month.

#### *Power*

Total installed power for the preferred Continuous Process Option was derived from vendor specification.



Power was priced assuming fuel consumption at a rate of 0.27 litres diesel/kWhr and a delivered diesel price of US\$0.95 per litre (equivalent to US\$0.2565 per kWhr).

It should be noted that the fuel price assumption is particularly conservative as Egyptian fuel prices are presently subject to generous Government subsidies as a result of which the present price is approximately US\$0.20 per litre. The significantly higher fuel price assumption was made in order to accommodate a possible change of policy as regards fuel subsidies for the mining and manufacturing sectors. Such changes have been mooted although not yet implemented.

### **Capital Cost Estimates**

#### *Process Plant & Equipment*

The capital cost estimates for process plant and equipment are based on current vendor quotations

#### *Ancillary Equipment and Infrastructure*

Consistent with the driving concepts to minimise capital expense and maximise operational simplicity, it is intended to rely on external service providers to the extent possible.

As regards power generation, the overall power requirement is not high and it is intended to purchase a mobile generator for the wet plant. An allowance equal to US\$750 per installed kilowatt has been included in the capital cost estimates.

Site preparation is not required and the only site works to be undertaken involves establishing a clean and a dirty process water pond with 12,500 cubic meter capacity each. These will be lined with plastic to minimise seepage loss.

The decision to undertake all gravity processing on site obviates the need to refurbish the existing haul road connecting the mine site to the FZ site as an alternative albeit longer road exists and is in good condition.

#### *Pre-production Costs & Working Capital*

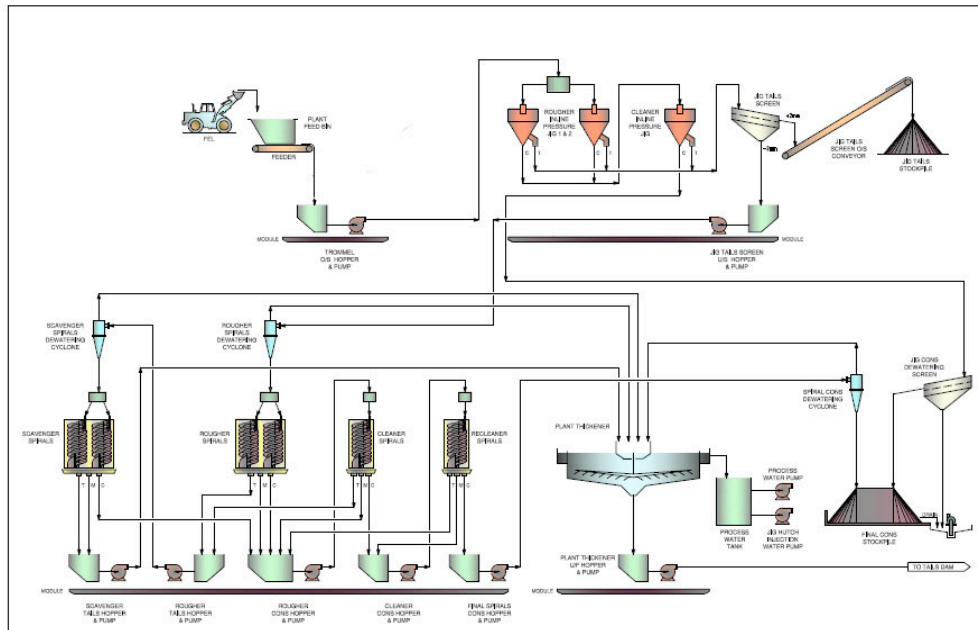
Pre-production costs associated with the commencement of mining and screening operations were developed from the corresponding operations schedules for each scenario for each of the Continuous Process Option and the Batch Process Option. Costs associated with progress payments to vendors were based on detailed vendor payment schedules or otherwise estimated.

### **Cash Flow Modelling**

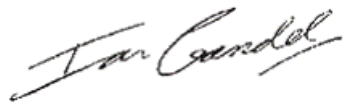
#### *Revenue*

Project revenue was calculated on a monthly basis assuming 20 tonne containerised shipments; price of US\$21,600 per tonne of tin-in-concentrates; payment terms 80% ex gate on dispatch of shipment with the balance plus 2 months.

## Continuous Process Option Flow Sheet



For and on behalf of the Board



**Ian Gandel**  
Chairman

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### 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.