

25 June 2014

## Snapshot:

Current CSD Share Price: **\$0.055**

Current LME Tin Price: **\$22,545**

Detailed information at  
[www.cstdtin.com.au](http://www.cstdtin.com.au)



## Key Points

- ◇ Mineral Resource Estimate completed by Optiro Pty Ltd
- ◇ Major milestone in development pathway
- ◇ Review achieves greater confidence in the Resource Estimate at the Mt Garnet Tin Project
- ◇ Total Mineral Resources of 12.05Mt at 0.4% Sn
- ◇ Updated Mt Garnet Mineral Resource supports the Company's initial 10 year mining operation at 1Mt per annum
- ◇ Definitive Feasibility Study underway
- ◇ On track to develop the Mt Garnet Tin Project into a major low cost open pit mining operation

## Gillian JORC Resource upgrade and Project Update

### Highlights:

- Negotiations in respect of Snow Peak asset acquisition agreement nearing completion
- Second phase of pilot plant testwork for tin fuming underway
- Gillian mining economics improved with grade increase near surface
- Improved confidence of Gillian Resource with 93% of the Mineral Resource in Measured/Indicated categories:
  - Measured Mineral Resource tonnes increased by 8.6% to 1.2Mt (from 1.1Mt); Grade increased to 0.86% Sn (from 0.73% Sn)
  - Indicated Mineral Resource tonnes decreased by 400,000t; Grade increased by 19% to 0.74% Sn (from 0.62% Sn)
  - Inferred/Inferred Extrapolated Mineral Resource reduced by 750,000t
- Gillian Deposit total Mineral Resource now 2.53Mt @ 0.78% Sn (0.97% Sn equivalent)
- The total Mineral Resource for the Mt Garnet Tin Project now 12.05Mt @ 0.4% Sn (0.58% Sn equivalent)

### Registered Office:

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**25 June 2014**

Australian tin exploration and development company Consolidated Tin Mines Ltd (ASX: CSD) (Consolidated Tin, the Company) is pleased to announce a revision to the JORC Resource Estimate at its Mt Garnet Tin Project, near Cairns in northern Queensland.

## **Project Update**

The Company has been diligently progressing discussions with Snow Peak Mining in relation to its proposed purchase of assets, which may now include not only the Mt Garnet processing facility but also other SPM assets and tenement interests held. Specialist consultants have been engaged to develop the most cost effective transaction structure and reduce associated transfer fees payable, and this has resulted in some delays. The parties are in the process of negotiating the terms of the revised transaction and it is anticipated that a formal agreement could be finalised in the coming weeks, at which time the material terms of the proposed transaction will be released to the market.

A second phase of pilot plant testwork is currently underway at the Ansac facility in Bunbury. This program will provide further definition of process parameters required to produce the high quality stannous oxide product from fuming of concentrate.

Discussions are continuing at various levels with interested parties with respect to partnering in the project.

## **Gillian Mineral Resource Upgrade**

The revision was completed by Optiro Pty Ltd, and was carried out in accordance with the 2012 JORC Resource guidelines and code for reporting of Mineral Resource Estimates. The Mineral Resource model has been updated by the incorporation of results from recent RC and diamond drilling by CSD. The drill holes were designed as 'multi-purpose' to infill and upgrade the confidence of the Mineral Resource as well as obtain metallurgy samples and provide geotechnical information. The updated Resource figures are provided in Table 1. The results from the drilling generally supported the global interpretation of the 2013 Mineral Resource (see ASX announcement, 26 June 2013).

The Gillian deposit now has a total Resource of **2.53Mt @ 0.78% Sn**, for total Contained Tin of 19,800t; this compares to the previous Resource Estimate (June 2013) of 3.60Mt @ 0.65% Sn, for total Contained Tin of 23,400t. The net reduction of 1.06Mt of resource at Gillian in comparison to the 2013 estimate is largely due to the removal of deeper Inferred and extrapolated inferred Mineral Resource material from the previous interpretation. This is in part offset by an increase in the overall resource grade at Gillian from 0.65% Sn to 0.78% Sn, and specifically an increase of 90,000t of Measured Resource at Gillian to 1.20Mt @ 0.86% Sn.

The new total JORC Resource estimate for the Mt Garnet Project is **12.05Mt @ 0.4% Sn**. This represents a decrease in Resource tonnage from the previous Resource estimate of 13.12Mt @ 0.39% Sn.

The new Resource estimate is a major milestone in the development of the Mt Garnet Tin Project. This Resource upgrade is focused on the Gillian Deposit which is planned to be the first deposit mined when mining operations commence. A current model of the Gillian deposit is shown in Figure 2, with the previous model (June 2013) shown in Figure 3. The comparison of these two models clearly shows the removal of deeper inferred mineralisation, which will significantly improve the mining economics.

The updated Resource estimate will be a key input to the Mt Garnet Tin Project Definitive Feasibility Study (DFS). The DFS is based on a treatment rate of 1Mtpa through the existing Mt Garnet Concentrator. Further details on the DFS will be released in the second half of 2014.

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Consolidated Tin Managing Director John Banning said: *"The objective of this program was to provide increased confidence in the Resource at Gillian and to optimise the mining economics of the deposit. This objective has been achieved. The Gillian deposit continues positive progress through the Definitive Feasibility Study with completion expected in the second half of 2014, and to production in 2015."*

## **Pinnacles, Deadmans Gully & Windermere Deposits**

The Resource Estimates for Pinnacles, Deadmans Gully and Windermere Deposits have not been updated since the ASX Announcement of 26 June 2013. The existing Resource Estimates for these three deposits are included in Table 1 to give a total Resource Estimate for the Mt Garnet Tin Project as at June 2014.

## **Gillian May 2014 Mineral Resource Estimate Summary**

The Gillian Project is 100% owned by Consolidated Tin Mines Limited (CSD), situated west of Mount Garnet on MDL38. The deposit sits within freehold land and no native title or other interests exist. The deposit is a tin/iron skarn with a geological setting of altered limestone beds within the Chillagoe Formation which has been intruded by granites. Mineralisation is fine grained cassiterite, magnetite and goethite. The deposit has dimensions of 850 m (north) by 880 m (east) and 250 m (elevation).

The Gillian May 2014 Mineral Resource update was carried out on the basis of new diamond and RC drilling, designed to infill and upgrade the resource. The deposit was sampled using Reverse Circulation (RC) and HQ triple tube diamond (DD) drilling techniques on a nominal 20 m by 20 m grid spacing. A total of 233 RC and 47 DD holes were drilled for 12,742 m and 3,769.2 m respectively. Collar locations for 60% of the drill holes were surveyed by CSD using RTK-DGPS and the remainder by standard Differential GPS.

RC drilling was used to obtain 1 m samples, which were split using a rig mounted three tier riffle splitter to obtain a 12.5% representative sample. Diamond core was HQ size, sampled from a minimum width of 0.2 m and maximum of 1.2 m within lithological boundaries, and cut by CSD into half core by manual core saw. The sample preparation of diamond core involved logging of sample weights, oven drying, and coarse crushing of the half core sample down to ~ 10 mm. Samples weighing <3.3 kg undergo pulverisation of the entire sample (total sample preparation) using Essa LM5 grinding mills to a grind size of 85% passing 75 micron. Samples weighing >3.3 kg are riffle split, typically in half, with a split size between 1.65 kg and 3.3 kg undergoing pulverization. The sample preparation for RC samples is identical, without the coarse crush stage.

A sub-sample of 0.5 grams and 8 grams of flux containing 80% 12:22 X-ray flux (12 parts lithium tetraborate and 22 parts lithium tetraborate) and 20% sodium nitrate is mixed in a platinum crucible and roasted in a muffle furnace at 700°C for 20 minutes. The sample is then fused at 1,100°C and poured into a platinum mould (40 mm diameter) where the mixture cools to create a solid disc. This disc is then assayed by sequential XRF calibrated with a mixture of CRMs and synthetic discs fused the same way. Tin and iron were assayed using fused bead preparations with XRF determination, or a sodium peroxide fusion with ICP-MS determination. QAQC procedures involve the use of industry certified blanks and standards, along with field duplicates and laboratory checks. QAQC samples represented approximately 8% of all samples sent to laboratory. Statistical analysis of duplicate sample data for tin shows a high level of repeatability and no bias between the original and duplicate sample data. Results for blanks and industry certified standards show no significant variation across all samples analysed.

The deposit is tabular in geometry, with clear geological and grade boundaries which define the mineralised domains. The mineralisation is contained within a series of tabular skarn lenses that formed within carbonate-rich sediment beds. Brecciation and faulting has disrupted the lenses in places and this has been modelled. The deposit appears similar in style to many skarn hosted deposits. A nominal grade cut-off of 0.2% Sn has been used as an economic indicator between mineralised and un-mineralised skarn alteration. This cut-off grade was used to define the mineralised envelopes.

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Grade estimation using Ordinary Kriging (OK) was completed for the deposit using CAE Studio™ software for two elements; Sn% and Fe%. Drill hole sample data were selected using three dimensional mineralisation domains and composited to a one metre downhole length using a best fit-method. Top-cuts were applied to the Sn for block grade estimation. Directional variograms were modelled and nugget values are low. Grade continuity was characterised by short to moderate ranges. Estimation searches for all elements were set to the ranges of the Sn variogram for each domain.

The block model was constructed using a 5 mE by 10 mN by 5 mRL parent block size with sub-celling to 1 mE by 2mN by 1 mRL for domain volume resolution. All estimation was completed at the parent cell scale. The size of the search ellipse per domain was based on the Sn variography and three search passes were used for each domain. The first pass used the ranges of the variogram and a minimum of 6 and maximum of 28 samples. In the second pass the search ranges were unchanged, and the minimum number of samples reduced to 6. The third pass ellipse was extended to two times the range of the variograms and a minimum of 2 and a maximum of 28 samples was applied.

The majority of blocks (94%) were estimated in the first pass. Hard boundaries were applied between all estimation domains for the southern lodes. The northern lode was divided into three estimation domains, based on orientation, and soft boundaries were applied for grade estimation of this lode. The tonnages are estimated on a dry basis. Bulk density measurements were determined using the Archimedes Principle and a selection of samples was sent to a laboratory for verification. A total of 1,936 bulk density measurements have been taken at the Gillian deposit and these were analysed in conjunction with the iron and tin grades of the sample to determine a density regression formula.

No mining has taken place; therefore no production data is available. No assumptions have been made regarding recovery of any by-products. Preliminary investigations indicate there are no "significant" amounts of deleterious materials in the resource. No assumptions on mining methodology have been made. Metallurgical testing has been conducted using various technologies to identify the most economic process. Current test work shows extraction of tin through a fuming process producing a high graded tin product, while also producing a beneficiated iron ore product. Processes for extraction will include reduction of silica through gravity and flotation methods then feeding an upgraded tin bearing iron ore to a kiln to produce a Tin fume and upgraded Iron Ore product. Terrenus are completing preliminary geochemical investigations into waste rock and ore characteristics, and initial results show very low NMD and AMD characteristics.

The Mineral Resource classification is based on confidence in the geological and grade continuity, along with the drill hole spacing and estimation parameters. Measured Mineral Resources are generally defined in areas with 20 m by 20 m drilling, good geological and grade continuity, and near surface or outcropping expression. Indicated Mineral Resources were defined in areas with similar drill spacing and well supported geological and grade continuity. Inferred Mineral Resources were defined for depth extents of mineralised domains.

The project is currently at Pre-Feasibility and a financial model was conducted, results were released to market in October 2013.

#### **Tin equivalent\***

Taking into account the potential value of the iron and fluorine by-products which may be produced during future tin production at the Mt Garnet Project, the total current Resource for the project is **12.05Mt @ 0.58% Sn equivalent**.

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This tin equivalent value is based on the following Formula, product pricing\* and metallurgical recoveries:

$$\text{Sn\%} + (\text{Fe\%} * \text{FeREC} * \text{Fe\$}/\text{t} / \text{Sn\$}/\text{t}) + (\text{F\%} * \text{FREC} * \text{F\$}/\text{t} / \text{Sn\$}/\text{t}) \\ (\text{Sn\%}) + (\text{Fe\%} * 0.75 * (150/20,000)) + (\text{F\%} * 0.7 * (400/20,000))$$

Sn	70% recovery @ AUD 20,000/tonne
Fe	75% recovery @ AUD 150/tonne
F	70% recovery @ AUD 400/tonne
REC	Recovery

\* Pricing has been based on an approximate five year average commodity price. In the case of Iron, the price is based on Iron Ore Pellets as the reduction process produces high grade iron pellets which sells for a premium over Iron Ore Fines. Product marketing will continued to be reviewed and revised as part of the DFS process.

Consolidated Tin Mines considers the assumed Sn metal equivalent values for Fe and F are reasonable based on recoveries of these by-products during testwork completed on the respective orebodies; conservative recovery values of Sn 70%, Fe 75% and F 70% have been used. The company is confident there is reasonable potential for these recoveries to be achieved. With regard to the economic value of the by-products, an initial market review indicates that the concentrates can realistically be sold for the values used in the calculation.

## ENDS

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## Attachments

- Table 1: Mt Garnet Tin Project – Sn, Fe and F grade tonnage summary, as at June 2014
- Table 2: Mt Garnet Tin Project – Sn equivalent grade tonnage summary, as at June 2014
- Figure 1: Mt Garnet Key Projects Map
- Figure 2: Gillian 2014 Resource – Oblique Long Section looking Grid North
- Figure 3: Gillian June 2013 Resource – Oblique Long Section looking Grid North
- Table 3: Checklist of Assessment and Reporting Criteria (JORC Code Table 1)

## About Consolidated Tin Mines

Consolidated Tin Mines is an emerging ASX-listed (ASX: CSD) tin explorer and developer. Its major project is the Mt Garnet Tin Project approximately 180km south west of Cairns in northern Queensland, comprised of the Gillian, Pinnacles and Windermere deposits (refer to Key Project Map in Figure 1). The project is located in an established mining area, in close proximity to mining and concentrating infrastructure. Consolidated Tin's objective is to develop the project into a major low cost, open pit tin mining operation processing 1Mt per annum to produce approximately 5,000 tonnes p.a. of tin in concentrate, commencing with key deposits, Gillian and Pinnacles. On completion of a favourable DFS, Consolidated Tin's strategy is to develop and establish tin production in 2015 and focus on increasing mine life and production profile by developing other tin production opportunities within the broader Mt Garnet Tin Project area.



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Table 1: Mt Garnet Tin Project – Sn, Fe and F grade tonnage summary, as at June 2014

<b>TIN (Sn)</b>	<b>Cut-off Sn_EQ %</b>	Measured tonnes	Grade Sn%	Indicated tonnes	Grade Sn%	Inferred tonnes	Grade Sn%	Total tonnes	Grade Sn%
Gillian	0.20	1,200,000	0.86	1,160,000	0.74	180,000	0.53	<b>2,530,000</b>	<b>0.78</b>
Pinnacles	0.33	-	-	5,461,000	0.30	1,575,000	0.30	<b>7,035,000</b>	<b>0.30</b>
Deadmans Gully	0.18	-	-	444,000	0.34	-	-	<b>444,000</b>	<b>0.34</b>
Windermere	0.25	-	-	829,000	0.26	1,211,000	0.27	<b>2,040,000</b>	<b>0.27</b>
<b>TOTAL</b>		<b>1,200,000</b>	<b>0.86</b>	<b>7,894,000</b>	<b>0.36</b>	<b>2,966,000</b>	<b>0.30</b>	<b>12,049,000</b>	<b>0.40</b>

<b>IRON (Fe)</b>	<b>Cut-off Sn_EQ %</b>	Measured tonnes	Grade Fe%	Indicated tonnes	Grade Fe%	Inferred tonnes	Grade Fe%	Total tonnes	Grade Fe%
Gillian	0.20	1,200,000	34.20	1,160,000	32.50	180,000	25.20	<b>2,530,000</b>	<b>32.80</b>
Pinnacles	0.33	-	-	5,461,000	19.12	1,575,000	21.04	<b>7,035,000</b>	<b>19.55</b>
Deadmans Gully	0.18	-	-	444,000	26.70	-	-	<b>444,000</b>	<b>26.70</b>
Windermere	0.25	-	-	829,000	25.79	1,211,000	23.68	<b>2,040,000</b>	<b>24.54</b>
<b>TOTAL</b>		<b>1,200,000</b>	<b>34.20</b>	<b>7,894,000</b>	<b>22.21</b>	<b>2,966,000</b>	<b>22.37</b>	<b>12,049,000</b>	<b>23.44</b>

<b>FLUORINE (F)</b>	<b>Cut-off Sn_EQ %</b>	Measured tonnes	Grade F%	Indicated tonnes	Grade F%	Inferred tonnes	Grade F%	Total tonnes	Grade F%
Pinnacles	0.33	-	-	5,461,000	6.28	1,575,000	4.14	<b>7,035,000</b>	<b>5.80</b>
<b>TOTAL</b>		<b>-</b>	<b>-</b>	<b>5,461,000</b>	<b>6.28</b>	<b>1,575,000</b>	<b>4.14</b>	<b>7,035,000</b>	<b>5.80</b>

NB: Tonnes may not add up to totals due to rounding

Table 2: Mt Garnet Tin Project – Sn equivalent grade tonnage summary, as at June 2014

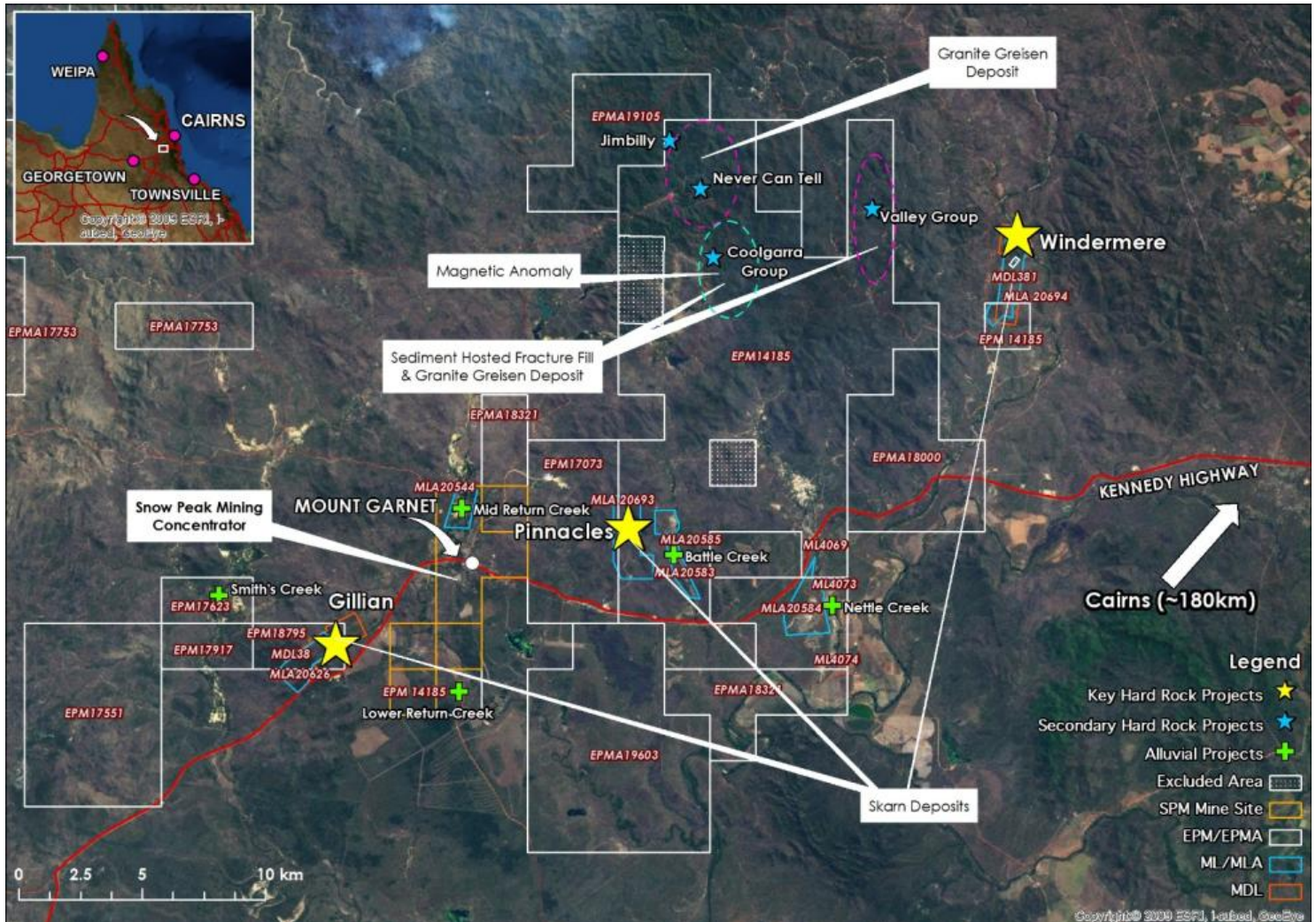
<b>TIN EQUIVALENT (Sn_EQ)</b>	<b>Cut-off Sn_EQ %</b>	Measured tonnes	Grade Sn_EQ %	Indicated tonnes	Grade Sn_EQ %	Inferred tonnes	Grade Sn_EQ %	Total tonnes	Grade Sn_EQ %
Gillian	0.20	1,200,000	1.05	1,160,000	0.92	180,000	0.68	<b>2,530,000</b>	<b>0.97</b>
Pinnacles	0.33	-	-	5,461,000	0.50	1,575,000	0.47	<b>7,035,000</b>	<b>0.49</b>
Deadmans Gully	0.18	-	-	444,000	0.49	-	-	<b>444,000</b>	<b>0.49</b>
Windermere	0.25	-	-	829,000	0.40	1,211,000	0.41	<b>2,040,000</b>	<b>0.41</b>
<b>TOTAL</b>		<b>1,200,000</b>	<b>1.05</b>	<b>7,894,000</b>	<b>0.55</b>	<b>2,966,000</b>	<b>0.46</b>	<b>12,049,000</b>	<b>0.58</b>

NB: Tonnes may not add up to totals due to rounding

The information in this announcement that relates to the Gillian Resource is based on information compiled by Mr Mark Drabble, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Drabble is a Principal Consultant Geologist of Optiro Pty Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity currently being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Drabble consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to the Mount Garnet Mineral Resource (excluding the Gillian Resource) is extracted from the ASX announcement dated 26 June 2013 and is available to view on [www.csdtin.com.au/asx-releases](http://www.csdtin.com.au/asx-releases). The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Figure 1 - Mt Garnet Key Projects Map



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Figure 2: Gillian 2014 Resource – Oblique Long Section looking Grid North

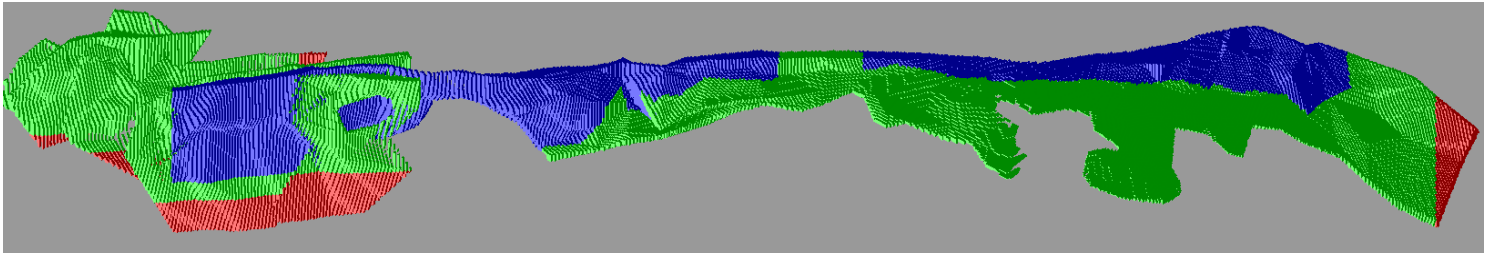
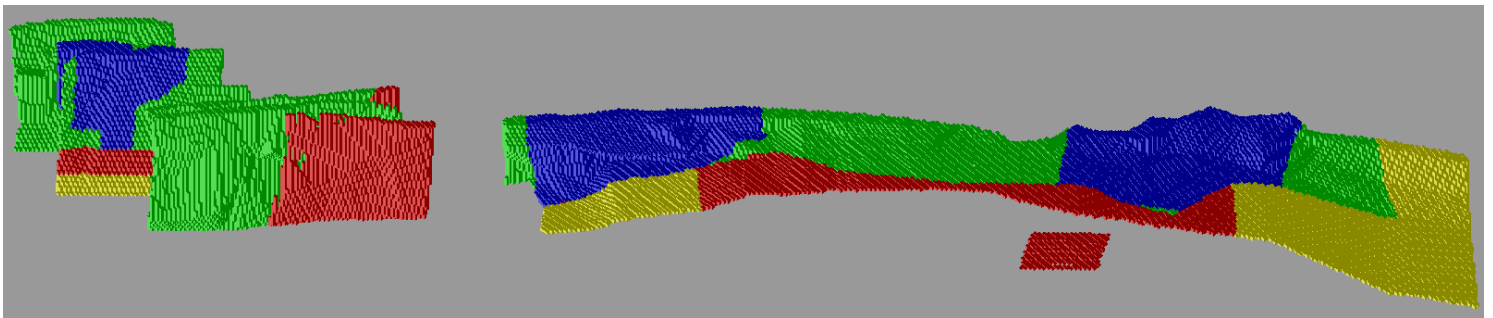






Figure 3: Gillian June 2013 Resource – Oblique Long Section looking Grid North



Resource Categories	
	- Measured
	- Indicated
	- Inferred
	- Inferred Extrapolated



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Table 3: Checklist of Assessment and Reporting Criteria (JORC Code Table 1)

## SECTION 1: SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	<p>The Gillian deposit was sampled using Reverse Circulation (RC) and HQ triple tube diamond (DD) drill holes.</p> <p>The Gillian deposit was drilled on nominal 20 m by 20 m grid spacing. A total of 233 RC and 47 DD holes were drilled for 12,742 m and 3,769.2 m respectively. Holes were drilled at varying angles to optimally intersect the mineralised zones.</p> <hr/> <p>Collar locations for 60% of holes at Gillian were surveyed by CSD using RTK-DGPS providing a horizontal accuracy of +/- 0.01 m and vertical accuracy of +/- 0.02 m; the remainder was recorded using a standard Differential GPS with 0.6 m to 1 m horizontal accuracy.</p> <p>RC drilling was used to delineate the resource, with DD used to validate the interpretation, while at the deeper eastern end of the deposit, DD was used to ensure intersections where achieved and sample quality was maximized. The RC samples were collected by riffle splitter. Diamond core was used to obtain high quality samples that were logged for lithology, structure, density and other attributes. Sampling was carried out under CSD protocols and QAQC procedures.</p> <hr/> <p>RC drilling was used to obtain 1 m samples, which were split using a three tier riffle splitter below the cyclone of the drill rig to obtain a 12.5% representative sample.</p> <p>Diamond core was HQ size, sampled from a minimum width of 0.2 m and maximum of 1.2 m within lithological boundaries, and cut by CSD into half core by manual core saw, sent to the laboratory, which was then crushed, and if above 3 kg was riffle split at the laboratory.</p> <p>A sub sample of 0.5 grams and 8 grams of flux containing 80% 12:22 X-ray flux (12 parts lithium tetraborate and 22 parts lithium tetraborate) and 20% sodium nitrate is mixed in a platinum crucible and roasted in a muffle furnace at 700°C for 20 minutes. Sample is then fused at 1100°C and poured into a platinum mould (40 mm diameter) where the mixture cools to create a solid disc. This disc is then determined by sequential XRF calibrated with a mixture of CRMs and synthetic discs fused the same way.</p> <p>Samples were crushed, dried and pulverized (total prep) to produce a sub sample for analysis. Tin and iron were assayed using fused bead preparations with XRF determination, or a sodium peroxide fusion with ICP-MS determination.</p> <hr/> <p>Diamond drilling accounts for 20% of the drilling in the resource area and comprises of HQ sized triple tube core. DD hole depths range from 4 m to 190 m. Core orientation using a Reflex orientation tool has been completed on all seven geotechnical DD holes.</p> <p>RC drilling accounts for 80% of the total drilling and comprises 120-140 mm diameter face sampling hammer drilling. RC drill hole depths range from 4 m to 124 m.</p> <hr/> <p>RC sample recovery and quality data was logged for approximately 40% of all RC holes. Minimal evidence of smearing has been noted and intersections where it is noted have been excluded from the database.</p> <p>DD drilling recoveries were logged and where core loss occurred, it has been entered into the database. Where core loss has occurred, intervals are marked as 'not sampled', providing an overall slight dilution to grade of the intersection.</p> <hr/> <p>Driller used appropriate measures to maximise RC recovery such as SuperFoam. Triple Tube was used in DD holes to maximise recovery.</p> <p>Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers and CSD Geologist. RC samples were visually checked for recovery, moisture and contamination. Where poor sample return occurred, or sample was unable to be kept dry, the hole was stopped and diamond tails drilled if necessary.</p>

Criteria	Commentary
	<p>RC sample recovery and quality data was logged for approximately 40% of all RC holes. Minimal evidence of smearing has been noted and intersections where it is noted have been excluded from the database.</p> <p>DD drilling recoveries were logged and where core loss occurred, it has been entered into the database. Where core loss has occurred, intervals are marked as 'not sampled', providing an overall slight dilution to grade of the intersection.</p> <p>Small amounts (&lt;20 cm) of core loss was commonly encountered at the start of drill runs due to the soft nature of the core.</p>
Logging	<p>Geological logging was carried out on all diamond drill holes, with weathering, lithology, mineralogy, alteration, texture, mineralisation, structure, RQD and veining were all recorded.</p> <p>Geological logging was also carried out on chip samples from reverse circulation drilling, with primary lithology, mineralogy and alteration recorded.</p> <p>Seven DD holes have been completed and logged for geotechnical purposes. These holes used PQ3 coring and samples were collected and sent for geotechnical testing.</p> <p>DD core was photographed after mark up, before sampling with both Dry and Wet photos recorded.</p> <p>Logging of diamond core and RC samples recorded primary lithology, mineralogy, mineralisation, structural (DD only), weathering, and other features of the samples.</p> <p>All drill holes were logged in full.</p>
Sub-sampling techniques and sample preparation	<p>Core was cut in half onsite using a manual core saw. Where core was competent, and orientation allowed, samples were collected from the same side of the core.</p> <p>RC samples were collected on the rig using 1 in 4 splitters below the cyclone cone. In general, mineralised samples were dry. Where the sample return could not be kept dry, holes were stopped and diamond tails will used to complete the holes.</p> <p>The sample preparation of diamond core follows industry best practice in sample preparation involving logging of sample weights, oven drying, and coarse crushing of the half core sample down to ~ 10 mm.</p> <p>Samples weighing &lt;3.3 kg undergo pulverisation of the entire sample (total prep) using Essa LM5 grinding mills to a grind size of 85% passing 75 micron.</p> <p>Samples weighing &gt;3.3 kg are riffle split, typically in half, with a split size between 1.65 and 3.3 kg undergoing pulverization using Essa LM5 grinding mills to a grind size of 85% passing 75 micron.</p> <p>The sample preparation for RC samples is identical, without the coarse crush stage.</p> <p>Field QC procedures involve the use of industry certified blanks and standards, along with field duplicates and lab checks. QAQC samples represented approximately 8% of all samples sent to laboratory.</p> <p>RC field duplicates and lab checks were taken on 1m samples, using a riffle splitter.</p> <p>Statistical analysis of duplicate sample data for Sn shows a high level of repeatability and a lack of bias between the original and duplicate sample data.</p> <p>The sample sizes are considered to be appropriate to correctly represent the mineralisation at Mount Garnet based on: the style of mineralisation (skarn related mineralisation), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.</p>

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Criteria	Commentary
Quality of assay data and laboratory tests	The analytical techniques for tin and iron were fused bead preparations with XRF determination. This assay technique is considered a "total" assay technique – that is, the assay technique is considered to extract and measure the entire element contained within the sample.
	No geophysical tools were used to determine any element concentrations used in this resource estimate. Portable XRF was only used to assist in logging and all results reported are for lab analysis.
	Grind size checks were performed by the labs and reported as part of their due diligence.
	QAQC procedures involve the use of industry certified blanks and standards, along with field duplicates and lab checks. QAQC samples represented approximately 8% of all samples sent to the laboratory.
	Statistical analysis of duplicate sample data for tin shows a high level of repeatability and a lack of bias between the original and duplicate sample data.
	Results for blanks and industry certified standards show no significant variation across all samples analysed.
Verification of sampling and assaying	No independent verification of significant intersections has been carried out for the most recent RC and diamond drill program; however Optiro did carry out an independent verification of previous drill intersections in June 2013.
	DD was used to twin a number of RC holes as part of the most recent drill program at Gillian. There is a good correlation between the DD twin holes and initial RC holes.
	Data is collected by qualified geologists and entered into spreadsheets with pre-determined lookup fields. An internally developed database system is in use at Mount Garnet with backups and audit records stored. Validation rules are in place to ensure no data entry errors occur. Data is loaded into the database by CSD staff and is reviewed by supervisors.
	No adjustments or calibrations were made to any assay data in this announcement.
Location of data points	Collar locations for 60% of holes at Gillian were surveyed by CSD using RTK-DGPS providing a horizontal accuracy of +/- 0.01 m and vertical accuracy of +/- 0.02 m; the remainder was recorded using a standard Differential GPS with 0.6 m to 1 m horizontal accuracy. No local grids are in use, with MGA Zone 55 and AHD grids used.
	A combination of Eastman camera shots and digital downhole surveys has been used. Total magnetic field is reviewed for each survey to ensure accurate representation of the drillhole bearing.
	The grid system is GDA 1994 MGA zone 55.
	Topographic contours were collected via Airborne LiDAR over entire project area. 4 samples points taken per square metre.
Data spacing and distribution	Drill hole spacing across the deposit is 20 m (northing) by 20 m (easting).
	The mineralised domains have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resource and Reserves, and the classifications applied under the JORC Code (2012 Edition).
	Samples have been composited to one metre lengths, and adjusted where necessary to ensure that no residual sample lengths have been excluded (best fit).
Orientation of data in relation to	Wireframes are modelled around significant intercepts and to outcrop identifying that holes are generally near perpendicular to structures.

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Criteria	Commentary
geological structure	<p>The data is generally drilled in angles that intersect the mineralised domains perpendicularly, or at a high angle. The orientation of the drill holes across the Mount Garnet Project is varied in order to achieve the best orientation relative to the domain being drilled.</p> <p>No orientation based sampling bias has been identified in the data at this point.</p>
Sample security	Chain of custody is managed by CSD. Samples are stored on site, and are collected from site by Toll Ipec for transport and deliver to the assay laboratory. Sample bags are sealed for storage and transport.
Audits or reviews	A review of the sampling data from previous drill programs was carried out by Optiro as part of the 2013 resource estimate. No review has been completed on the data specific to this release.

**SECTION 2: REPORTING OF EXPLORATION RESULTS**

Criteria	Commentary
Mineral tenement and land tenure status	MDL38 Gillian is 100% owned by Consolidated Tin Mines Limited, situated on a free hold block, west of Mount Garnet. The deposit sits within freehold land and no native title or other interests exist.
Exploration done by other parties	No other parties have been involved in exploration on this site.
Geology	The deposit is a tin/iron skarn; geological setting is altered limestone beds within the Chillagoe Formation intruded by granites. Mineralisation is fine grained cassiterite, magnetite and goethite.
Drill hole information	This information is provided in previous announcements to the ASX, including on 11 June 2014, 17 December 2013, 26 June 2013 and 11 June 2013.
Data aggregation methods	<p>For all results, a cut off of 0.2% Sn has been used.</p> <p>Intercepts are separated into two or more mineralised lenses, where a gap of at least 2 m of non-mineralised material (i.e. less than 0.2% Sn) occurs. In a broad intercept, individual metres of low grade material may be incorporated into the overall 'minable intersection'.</p> <p>The tin equivalent calculation uses the PFS recovery value of 75% for iron and a price of \$20,000AUD/t for Tin, which is slightly lower than the 5 year mean.</p> <p>The price of \$150AUD/t for Iron is based on the 5 year mean and therefore will remain.</p> <p>The metal equivalent formula is: <math>Sn(Eq) = (Sn\%) + (Fe\% \cdot 0.75 \cdot (150/20,000))</math>.</p>
Relationship between mineralisation widths and intercept lengths	Drill holes in this program were designed to intersect the mineralised domains perpendicularly, or nearly perpendicular. Dip and strike of holes was designed precisely to allow accurate pierce points within the deposit. In general the orientation of the drill holes across the Gillian deposit is varied in order to achieve the best orientation relative to the domain being drilled. Due to surface accessibility restrictions some drill hole intersections are not representative of true width of the mineralised zone. Modelling of these zones however is representative of the mineralised zones.
Diagrams	Relevant diagrams are included in previous announcements to the ASX, including on 11 June 2014, 17 December 2013, 26 June 2013 and 11 June 2013.



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Criteria	Commentary
Balanced Reporting	Balanced reporting of exploration results is carried out to show representative results.
Other substantive exploration data	A 15 tonne bulk sample was collected during the RC drill program from various zones of tin mineralisation across the deposit (from three ore types being primarily magnetite, goethite and other). This bulk sample will be used for final metallurgical testing work which is currently underway.
Further Work	No further resource definition work is planned. Ongoing work includes activities for DFS studies including reviewing the Fluorine content of the deposit for metallurgical testwork, geotechnical reporting, geochemical waste studies, hydrogeological studies, environmental monitoring, mine planning, pit optimization and metallurgical testwork.

### SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary
Database integrity	<p>Data templates with lookup tables and fixed formatting are used for logging, spatial and sampling data. Data transfer is via electronic means on CSD servers. Sample numbers are unique; however, sample bags are manually numbered through the use of pre-printed numbered ticket books.</p> <p>Validation rules are in place to ensure correct intervals are entered, no repeated information recorded etc.</p> <p>Data has been reviewed by an independent geologist.</p>
Site visits	<p>A site visit was undertaken by Michael Andrew (Principal Consultant - Optiro); prior to completion of the 2013 resource estimate.</p> <p>No site visit has been conducted in 2014 by Optiro.</p>
Geological interpretation	<p>The confidence in the geological interpretation is considered good. The global geological setting consists of intrusive granites within sediments, and associated contact metasomatism. The economic mineralisation is contained within a series of tabular skarn lenses that formed within carbonate-rich sediment beds. Brecciation and faulting has disrupted the lenses in places and this has been modelled. The deposit appears similar in style to many skarn hosted deposits.</p> <p>Lithology, structure and mineralisation were used to assist in the interpretation process.</p> <p>The deposit is tabular in geometry, with clear geological and grade boundaries which define the mineralised domains. Infill drilling has supported and refined the model and the current interpretation is thus considered to be robust.</p> <p>Geology, particularly the style of mineralisation, was used to define the mineralisation interpretation. Key features are structure, lithology and mineralisation content. 3D Leapfrog geological models were used in the interpretation process of the mineralised domains.</p> <p>Overall, exploration has indicated that the Gillian deposit is quite uniform in its mineralisation style and overall grade, although there is evidence of brecciation and disruption of the deposit into a series of nine modelled lenses. Grade and geology seen in the exploration to date are relatively consistent, which is common with the nature of a skarn deposit.</p>

Criteria	Commentary
Dimensions	The Gillian deposit has dimensions of 850 m (north) by 880 m (east) and 250 m (elevation).
Estimation and modelling techniques	<p>Grade estimation using Ordinary Kriging (OK) was completed for the deposit using CAE Studio™ (Datamine™) software for two elements; Sn% and Fe%. Drill grid spacing is nominally 20 m.</p> <p>Drillhole sample data was flagged using domain codes generated from three dimensional mineralisation domains. Sample data was composited to a one metre downhole length using a best fit-method. There were consequently no residuals. Intervals with no assays were excluded from the compositing routine.</p> <p>The influence of extreme sample distribution outliers was reduced by top-cutting where required. The top-cut levels were determined using a combination of top-cut analysis tools (grade histograms, log probability plots and CVs). Top-cuts were applied for Sn block grade estimation.</p> <p>Directional variograms were modelled using normal score transformations, which were converted back to traditional space. Nugget values are low. Grade continuity was characterised by short to moderate ranges. Estimation searches for all elements were set to the ranges of the Sn variograms for each domain.</p> <p>The results of previous resource estimates (June 2013) for the Mount Garnet Project by CSD are available.</p> <p>No mining has taken place; therefore no production data is available.</p> <p>No assumptions have been made regarding recovery of any by-products.</p> <p>Preliminary investigations indicate there are no "significant" amounts of deleterious materials in the resource.</p> <p>The block model was constructed using a 5 mE by 10 mN by 5 mRL parent block size with sub-celling to 1 mE by 2 mN by 1 mRL for domain volume resolution. All estimation was completed at the parent cell scale. Kriging neighbourhood analysis was carried out in order to optimise the block size, search distances and sample numbers used. Discretisation was set to 4 by 4 by 4 for all domains.</p> <p>The size of the search ellipse per domain was based on the Sn variography. Three search passes were used for each domain. In general, the first pass used the ranges of the variogram and a minimum of 12 and maximum of 28 samples. In the second pass the search ranges were unchanged, and the minimum number of samples reduced to 6. The third pass ellipse was extended to 2 times the range of the variograms and the minimum of 2 and a maximum of 28 samples was applied.</p> <p>In the all domains, the majority (94%) of blocks were estimated in the first pass.</p> <p>No selective mining units were assumed in this estimate.</p> <p>Statistical analysis was carried out to determine the correlation between each element on a deposit basis. This analysis showed a poor relationship between Sn and Fe. As such, variograms for estimation were determined for each element.</p> <p>The geological interpretation was used to constrain the mineralisation domains and nine lodes were defined. These domains were used as hard boundaries to select sample populations for variography and estimation.</p> <p>Statistical analysis showed the populations in each domain had a moderate coefficient of variation. Top-cuts were selected to remove only the top outlier values for Sn. The top-cut values were set to above the 99<sup>th</sup> percentile of the population.</p> <p>Validation of the block model carried out a volumetric comparison of the resource wireframes to the block model volumes. Validating the estimate compared block model grades to the input data using tables of values, and swath plots showing northing, easting and elevation comparisons. Visual validation of grade trends and metal distributions was carried out. No mining has taken place; therefore no reconciliation data is available.</p>

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Criteria	Commentary
Moisture	The tonnages are estimated on a dry basis.
Cut-off parameters	A nominal grade cut-off of 0.2% Sn has been used as an economic indicator between mineralised and un-mineralised skarn alteration. This cut-off grade was used to define the mineralised envelopes.
Mining factors or assumptions	Mining of the Gillian deposit will be by open pit mining methods involving mechanised mining techniques. The geometry of the deposits will make it amenable to mining methods currently employed in many open pit operations in similar deposits around the world. No assumptions on mining methodology have been made.
Metallurgical factors or assumptions	<p>Metallurgical testing has been conducted using various technologies to identify the most economic process. Current test work shows extraction of tin through a fuming process producing a high graded tin product, while also producing a beneficiated iron ore product.</p> <p>Processes for extraction will include reduction of silica through gravity and flotation methods then feeding an upgraded tin bearing iron ore to a kiln to produce a Tin fume and upgraded Iron Ore product.</p> <p>The project is currently at Pre-Feasibility and a financial model was conducted, results were released to market October 2013.</p>
Environmental factors or assumptions	Terrenus are completing preliminary geochemical investigations into waste rock and ore characteristics, and initial results show very low NMD and AMD characteristics.
Bulk density	<p>Bulk density measurements were determined using the Archimedes Principle and a selection of samples was sent to a lab for verification of SG's. Insignificant variation between Waxed and Non-Waxed methods was demonstrated.</p> <p>1,936 bulk density measurements have been taken at the Gillian deposit. Measurements from duplicate samples and unreliable methods were excluded. The data was screened within the mineralisation for the northern domain and to within or adjacent to the mineralisation within the southern domains. Spurious results were identified by comparison with adjacent samples and were excluded. The density measurements were analysed in conjunction with the Fe and Sn grades of the sample, and a regression formula was calculated. This was applied to the block model as the following formulae:</p> <p style="text-align: center;">Northern Domain: <math>DENSITY = 2.49 + (0.0186 * Fe) - (0.3533 * Sn)</math></p> <p style="text-align: center;">Southern Domains: <math>DENSITY = 2.515 + (0.011 * Fe) + (0.213 * Sn)</math></p> <p>Using this formula, the calculated bulk density of the mineralisation ranges from 2.45 to 3.47 t/m<sup>3</sup>.</p> <p>Measurements were performed with Archimedes principle. Insignificant variation between Waxed and Non-Waxed methods was demonstrated.</p> <p>The bulk density values for the Gillian deposits were calculated taking into account the estimated Fe and Sn grade, based on 318 reliable bulk density measurements within or adjacent to the mineralised zone with attendant assay values.</p>
Classification	<p>The Mineral Resource classification is based on good confidence in the geological and grade continuity, along with 20 m by 20 m spaced drillhole density. Estimation parameters have been considered during the classification process. Measured Mineral Resources are defined by 20 m by 20 m drilling good geological and grade continuity and near surface or outcropping expression. Indicated Mineral Resources were defined on similar drill spacing and well supported geological and grade continuity. Inferred Mineral Resources were defined on depth extents of mineralised domains.</p> <p>The validation of the block model shows good correlation of the input data to the estimated grades.</p>

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Criteria	Commentary
	The Mineral Resource estimate appropriately reflects the view of the Competent Persons.
Audits or reviews	<p>While previous estimates have been carried out for the Gillian deposit, Optiro is not aware of any previous audits or reviews that have been completed. Optiro staff completed internal review of the 2014 Mineral Resource model.</p> <p>The relative accuracy of the Mineral Resource estimate is reflected in the categorization and reporting of the Mineral Resource as per the guidelines of the JORC Code (2012 Edition).</p> <p>The statement relates to global estimates of tonnes and grade.</p> <p>No production data is available.</p>