



CARBINE TUNGSTEN

ASX ANNOUNCEMENT

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Mt Carbine Project Resource Statement Compliance with 2012 JORC Code

Carbine Tungsten Limited (ASX:CNQ) (“Carbine”) provides the following information that will render the Company’s resource statement compliant with the 2012 JORC Code for reporting of Mineral Resources and Ore Reserves.

Mt Carbine Tungsten Project Mineralisation

The deposit

The Mt Carbine tungsten deposit is a sheeted quartz vein deposit. A number of sub-parallel, sub-vertical quartz veins have been deposited in fractures developed in the host rocks (Siluro-Devonian metasediments) in a zone that drilling and mapping of historical surface workings has shown to be approximately 300m wide and at least 1.4km long, trending at about 315 degrees (Google © measurements).

Mineralogy

The two principal ore minerals of tungsten, wolframite and scheelite, occur in the quartz veins and wolframite is the dominant mineral of the two, with historical mill recoveries of the minerals in the ratio 80% wolframite and 20% scheelite. Wolframite grains vary in size from ~0.5mm to >250mm, and are unevenly distributed in quartz veins. Scheelite occurs as large (20mm) crystals and veins, replacement filling narrow fractures (20microns), and as films replacing margins of many wolframite crystals.

Grade variation

The amount of quartz veining varies within the mineralised zone and previous mining and exploration has been concentrated at the south eastern end of the mineralised zone. It is well understood that there are high grade zones within the mineralisation in this part of the deposit and that the higher grade zones are surrounded by lower grade mineralisation. Interpretation of recent drilling suggests that the main high grade zone may plunge to the north of the present open pit.



Historical (1974-1987) mine records

Records exist of the previous mine grade estimates, mine production, and mill throughput which are close to complete. All the drill core from 40 NQ cored drill holes on which the previous ore reserve estimates were based were preserved virtually intact, due to the fact that the previous method of grade estimation was a visual estimate. These cores have been re-logged and selectively sampled and assayed to verify historical visual estimates and assess historical grade control methodology. Carbine has drilled an additional 22 HQ cored holes, principally below and adjacent to the open pit to confirm mineralisation for the proposed open pit mine extension.

Sampling to deal with nugget effect in this ore body

The tungsten mineralisation is strongly nuggety. The sampling problems associated with deriving a reliable grade estimate for strongly nuggety mineralisation are in this case mitigated by records from the previous open pit mine that show 10Mt of ore was mined and processed through the mill that existed at the time. Before this mine and mill closed in 1987, extensive sampling and studies were carried out by mill staff to determine the recovery achieved by that milling process. Using the recovery results determined by these studies and the records of historical production, it has been possible to calculate the head grade of ore fed to the mill. This is a very substantial bulk sample check of the recent estimates of global average grade of ore yet to be mined, and a check of the modern estimate of global average grade of the ore mined in the historical pit as determined from core assays and visual grade estimates. These checks provide a high level of confidence in the grade estimate.

Resource estimation

Resource estimation was carried out over a strike length of 1200m, a width of 515m and down dip 620m. Mine planning has been confined to the south eastern end of the mineralised zone in an area approximately 600m by 300m. The following summarises the procedures, test work, and documentation that was integrated into the resource estimation, as tabulated in Table 1 in the JORC (2012) code. Two approaches to resource estimation were followed: Firstly, a conventional approach using drill assay data with a standard geostatistical approach and interpolation using the ordinary kriging method. Secondly, a reconciliation of tonnes and grade estimated using geostatistics with the historical mine and mill production records. **The results of this reconciliation indicate that the drill based estimates are conservative and these have been used in all subsequent mine planning/optimisation and economic assessment studies.**

Comments and discussion of items listed in JORC Code (2012) Table 1

Section 1. Sampling techniques and data:

The resource estimates are based on 62 cored drill holes with the following numbers and types of assay used.

XRF	2388	69%
ICP	434	13%
Visual Ests	641	18%
TOTAL	3463	100%

Table 1. Assay method/number of assays proportion

Approximately 5% of assayed samples were submitted to an independent umpire laboratory. Comparisons showed that there is a strong correlation between visual grade estimates and assayed grades.



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Drilling type

Diamond drill core, HQ and NQ both surveyed at 50m intervals. HQ core is oriented.

Drilling sample recovery

Core, recovery consistently >95%.

Logging and sub sampling

All cores logged, cut and quartered, and either half or quarter core sent for assay. All Carbine drilled holes were geotechnically logged and photographed. Sampling was mostly limited to quartz veins where mineralisation is identified, although two cored holes were sampled comprehensively to determine potential for tungsten mineralisation outside of quartz veins.

Quality of assay data

An independent assessment of QAQC measures was made by Geostat Pty Ltd, which concluded that the data was acceptable for the estimation carried out by that Company.

Verification of sampling and assay data

Data was independently verified.

Location of data points:

Drill collars, both modern and historical, were surveyed by a licensed surveyor using DGPS.

Orientation of data in relation to geological structure:

Drill hole data spacing throughout the Mt Carbine deposit is on approximate 50m sections along-strike, with some infilled to 25m spacings. Drill holes were often oriented both north and south at -45° to intersect the vertical quartz-vein zones at various depths.

Audits

An independent audit recommended the following additional procedures for future drilling:

- The use of standards at a rate of one standard for every 15-20 laboratory samples (minimum 5% of the total sample population);
- Coarse residue checks be conducted on a minimum 5% of all samples;
- Continuation of 5% of all assay pulps for submission to an umpire laboratory, together with the inclusion of some standards;
- Field duplicate samples to be greater than 500g in sample weight, preferably >1kg;
- Continuation of ¼ core duplicate samples for field duplicate analysis at a rate of 5% of the total sample population, with weighing of respective samples recorded upon arrival at laboratory;
- Documentation of batch submission checks (pass/fail) and other QAQC analyses.



Section 2. N/A

Section 3. Estimation and Reporting of Mineral Resources

Database integrity

See Section 1.

Site Visits

The Competent Person has been closely involved in resource assessment at Mt Carbine between 1985 and 1988, 1992 and between 2009 and the present. The relevant Competent Person has conducted numerous site investigations including mapping, sampling, core logging, review of historical resources and reserve estimates, mining, metallurgical processing and recovery.

Geological interpretation

See Section 1. The Competent Person aided by previous senior geological staff has developed a sound understanding of the geology and importantly, geometallurgy of the deposit.

Dimensions

See Section 1.

Estimation and modelling techniques

See Section 1.

Independent studies of assay data as part of the estimation of resources involved wireframing, statistical analysis, and variography, which preceded block modelling. A block model of parent cell size 10m (N) x 20m (E) x 5m (RL) subcelled to 5m x 10m x 2.5m using Surpac® software was constructed for the Mt Carbine deposit. Grades were estimated using ordinary kriging interpolation for all zones. A minimum of 5 composites and a maximum of 30 composites were used in interpolation of grades into blocks. Search ellipses for initial interpolation of grades comprised 100m x 25m x 75m. A second subsequent interpolation pass was employed with doubled search ellipses in order to fill blocks in areas of sparse drill density within the zones.

A classified Inferred remaining mineral resource for the Mt Carbine deposit was calculated as at 13th June 2012, totalling 47.4Mt at 0.13% WO₃ above a cut-off of 0.05% WO₃. This material represents that below the pit and outside the pit. A density of 2.78t/m³ was used to estimate resource block tonnage for all zones.

The global average grade of the volume that had been mined and milled was reconciled with historical production records and this indicates that the independent estimation of global average grade and tonnes is conservative.

Cut-off parameters

The estimate of Inferred and Indicated Resources used a cut-off of 0.05% WO₃ and employed a top cut of 4% WO₃, based on statistical analysis of grade distribution. The top cut is considered by the Competent Person to impose an additional conservative element in estimation of global average grade considering the extreme nugget nature of the mineralisation (assays exceeding 4% WO₃ imply drill intersects of larger crystals of wolframite - these are considered to be a significant but as yet unquantified component of recoverable wolframite).



Mining factors

Open pit mining by extension of the existing pit has been examined by independent engineering consultants and a pit optimisation study completed (see Section 4).

Metallurgical factors

The Mt Carbine ore body is low grade in comparison with many other tungsten deposits, however the highly successful application of ore sorting to pre-concentrate this ore to a high grade mill feed has been demonstrated firstly in the previous mining operation which used optical ore sorters, and secondly by extensive recent trials of X-Ray ore sorting of bulk samples of stockpile and Run of Mine ore by Carbine Tungsten Limited.

Environmental factors

Carbine Tungsten Limited has been granted an Environmental Permit by the Queensland Department of Environment and Heritage Protection (DEHP) to process the Low Grade Stockpile. The environmental studies for the submission of an application for an Environmental Permit to carry out open pit mining are at an advanced stage.

Bulk density

A total of 1,043 density measurements from drill core were supplied to Geostat Pty Ltd for use in the resource model. Density measurements were taken every 10m down hole on nearly all diamond drill holes, with the methodology of density measurements as follows: A length of solid and intact/unbroken core with essentially zero porosity was selected and the ends carefully cut with a diamond saw to make a near perfect cylinder. The core was then sun-dried and the length and diameter of the cylinder (average of three readings with calipers) and an accurate weight recorded to permit a simple volume/dry weight density estimate.

Density measurements were analysed for any spatial trends by easting, northing and depth, with no obvious trends detected. Hence, it was deemed appropriate to apply an average density to all orezones, and an average density of 2.78 was applied to the whole deposit.

Classification:

Geostat Pty Ltd classified the resources according to the following table, using a cut-off of 0.05% WO₃ and top cut of 4% WO₃:

RESOURCE CATEGORY	VOLUME	TONNES	WO3%	CONTAINED WO3
Inferred Resource	17,305,125	47,416,043	0.1314	62,305
Exploration Target	5,151,750	14,115,795	0.1187	16,755
Grand Total	22,456,875	61,531,838	0.1285	79,068

Table 2. Mt Carbine Inferred Resource and Exploration Target beneath & outside Mt Carbine pit



Comments and discussion relevant to Section 4.

Indicated Resource and Estimation of Ore Reserves

Following the study of historical open pit mine plans, metallurgical recovery from extensive test work, including ore sorter trials, pilot scale tests for gravity plant recovery and process and pit optimisation studies, the Competent Person decided that it was appropriate to classify **18Mt** of mineralisation in the Inferred Mineral Resource as an **Indicated Mineral Resource with a grade of 0.14% WO₃**. The Competent Person also determined that this Indicated Mineral Resource should be classified as a **Probable Ore Reserve**.

Study status

The conversion of resources to reserves was the outcome of the following independent studies:

- A Feasibility Study, which is now in the process of being refined to a Final Feasibility Study standard.
- Pit optimisation study of open pit mining options that has since been followed up by detailed design for an open pit, based on the expansion of the present open pit.
- Selection of appropriate pit slopes, taking account of the stability of the existing pit slopes.
- Grade control measures.
- Infrastructure (the mine is ideally situated with respect to infrastructure having sufficient grid power, sealed highway access, and adequate water supply).
- Ore sorter trials.
- Laboratory and pilot scale test work on appropriate bulk samples to determine parameters for flow sheet design for a gravity recovery circuit, using mainly samples from the Low Grade Stockpile (see below).
- Flow sheet design for a gravity recovery circuit.
- Detailed costings for operating and capital costs.
- Discounted cash flow modelling of project economics.

In addition, the following factors provide additional confidence when taking into account the factors outlined above:

- A key factor in developing confidence in the projected mine is the fact that it operated successfully before and that the products were very high grade concentrates.
- The Company already operates a treatment plant to recover mixed wolframite and scheelite concentrates from the main tailings dump associated with the previous mining operation. The tailings retreatment plant has made regular shipments of concentrate to Carbine's major off-take partner. Operation of the tailings recovery plant provides confidence that the anticipated mill recovery can be achieved, and has also provided an opportunity to recruit and train staff to operate the proposed mill.



Metallurgical factors

A geometallurgical approach to exploitation of the Mt Carbine tungsten deposit is considered critical to a successful outcome. Following extensive test work that has confirmed the validity of the previous milling process (but with improved recovery to be anticipated), the main components in the metallurgical process will essentially be as follows:

1. Crushing;
2. Ore sorting;
3. Jigging;
4. Spiralling;
5. Tabling.

The key parameter from the metallurgical test work and design is recovery of 75% of WO_3 in mill feed.

There are no by-product minerals, although the waste will be sold as aggregate or road base (this has not been included in the feasibility assessment of the project).

Tests and previous mine practice have shown that the main contaminant, arsenic in arsenopyrite, can be cost effectively removed by flotation and that the products will be very high grade (70% and 72% WO_3) wolframite and scheelite concentrates. Previous removal of arsenic (and other minor sulphides) by flotation of small concentrate volumes has had additional environmental benefits in that the existing stockpiles and tailings have been demonstrated to have no acid mine drainage potential.

Environmental

The processing of the stockpiles has been permitted, and the permitting for the proposed open pit extension is well advanced. The major environmental issues are already addressed in the Environmental Authority and Plan of Operations for processing of the Low Grade Stockpile.

Infrastructure (see above), and works are under way to physically comply with the conditions of the Environmental Permit.

Costs

Detailed cost estimates for operating and capital expenditure have been completed by independent engineers.

Revenues

The present price for Ammonium Paratungstate (APT), which is the benchmark for pricing of the tungsten concentrates that will be the mine product, is around US\$410 per Metric Tonne Unit (MTU). All mine studies have been based on a price of US\$290 per MTU and A\$ parity, however the Company's market studies indicate that the demand for tungsten concentrates will grow at 4.5% per annum and that therefore the price will remain firm.



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Market assessment

The Company holds an MOU with a major metal trading house for 80% offtake of product from the Low Grade Stockpile and at least 50% of the open pit mine product. Discussions with other off-takers are well advanced.

Social

The Company has a policy of employing local staff by preference and is already well regarded as a significant employer in the district.

Stockpiles

There are several stockpiles and dumps associated with the previous operation of the open pit tungsten mine within the present Mining Leases at Mt Carbine. The most important of these in terms of size and commercial potential are the main stockpile (the Low Grade Stockpile), and the Optical Ore Sorter Reject Stockpile. Production from the main tailings stockpile is already under way. Only the Low Grade Stockpile has been considered for exploitation as the next stage of re-development of the Mt Carbine tungsten mine, although the other stockpiles and dumps may be considered for exploitation in the future.

The Low Grade Stockpile has been estimated to contain at least 12 million tonnes (Mt) of broken rock stockpiled from the previous open pit mining operation. The calculation of tonnes has been derived from a nearly complete set of historical records obtained from the previous mining operation. Some material has been removed from this stockpile for sale as aggregate or road base since closure of the previous mine, and this is estimated to amount to less than 200,000 tonnes.

The broken rock in the stockpile includes material described in historical records as “overburden” and “mullock”, but the same records also indicate that the stockpile contains 3.5Mt described as “ore”. The “overburden” and “mullock” are known to have been taken from the mineralised system and therefore contain some tungsten mineral. The stockpile also contains all large (>1m) rock fragments rejected by the previous mine on the basis that they were too large to feed to the mine’s primary crusher, and visual inspection indicates that these large fragments include ore. The stockpile is from the same mineralisation as the open pit resources, and the geology and mineralogy are unchanged except that an attempt was made during mining to send lower grade material to the stockpile than went as ore to the mill. Doubts exist as to the effectiveness of the grade control procedure that was previously in place to attempt this separation.

Because no record was kept of the source nor the final location of material that went into the Low Grade Stockpile, a grade estimate for this stockpile was derived from a bulk sample. The bulk sample was obtained by excavation of 8 trenches using a 30 tonne excavator to dig trenches up to 10m deep and up to 50m long, sited to provide a time and depth sample of the stockpile as it was constructed over a period of 13 years.



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The bulk sample amounted to approximately 22,000 tonnes, and this was rilled down to 2,000 tonnes, which formed the basis for the extensive X-ray ore sorter trials carried out on site. The weighted average grade of the 2000 tonne sample derived from the bulk sample was 0.075%WO₃. This appears to be very conservative because subsequent assaying of 80 large (20kg) samples taken for environmental characterisation from around the perimeter of the stockpile averaged 0.154%WO₃, and further samples sent for metallurgical testing ranged from 0.1 to 0.22% WO₃. The conservative weighted average grade of 0.075% WO₃ has been used in all economic models and process design carried out for the treatment of the stockpile.

Final comments

The likelihood of success for the proposed stockpile treatment and open pit mining is underpinned by the fact that the same ore body was profitably mined for 13 years by the previous operators. The mine only closed in 1987 because of the price collapse caused by oversupply from Chinese producers dumping product on the market, resulting in the closure of most western tungsten producing mines. Prior to the price collapse, the Mt Carbine mine operators and their joint venture partners had carried out detailed plans to extend the mine life and maintain production for a further ten years.

The Mt Carbine mine had not run out of ore (there was an estimated 3.5Mt of ore to be extracted from the existing pit before any mine expansion had to be considered). The ore treatment process was well documented and studies spurred by the collapsing price showed that mill recovery could be significantly increased. This has since been confirmed by test work carried out by Carbine.

Yours sincerely

Carbine Tungsten Limited

A James Morgan

CEO & Managing Director

COMPETENT PERSONS' STATEMENT

The information in this Resource Statement that relates to Exploration Results and Mineral Resources and Ore Reserves is based on information compiled by Dr Andrew White, who is a Fellow of the Australian Institute of Geoscientists and a consultant to Carbine. Dr White has sufficient experience relevant to the style of mineralisation, mining and processing the type of deposit under consideration 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". Dr White consents to the inclusion of the matters based on his information in the form and context in which it appears.