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Mount Morgan's total Indicated Resource increases to 10.2 million tonnes at 1.2g/t for 394,000 gold ounces

Red Oxide Mineral Resource finalises the Resource upgrades required to enable the completion of the DFS

Highlights

◆ **The Indicated Mineral Resource for the Red Oxide tailings dump at the Mount Morgan Gold-Copper Project in Queensland has more than doubled to 0.83Mt at 2.17g/t gold for 58,000oz**

◆ **The total combined Indicated and Inferred Mineral Resources for Red Oxide is 0.86Mt at 2.17g/t gold for 60,000oz**

◆ **The Red Oxide tailings dump also contains an estimated:**

    – **2,600t of copper metal**

    – **500kg of silver metal**

◆ **Work has now commenced on updating the Mining Plan which will form the basis of the Definitive Feasibility Study to be completed in September**

Carbine Resources Limited (ASX:CRB) is pleased to advise that it is now in the final stages of the Definitive Feasibility Study on its Mount Morgan Gold-Copper Project in Queensland, with the completion of the last of four Mineral Resource estimates.

The JORC 2012 Indicated Mineral Resource at Mount Morgan's Red Oxide tailings dump is 0.83Mt at 2.17g/t gold for 58,000 ounces of gold (above a 0.00 g/t gold cut-off grade). This is an increase of 30,000oz from the previous Indicated Mineral Resource completed in 2009.

The total Indicated and Inferred Mineral Resource for Red Oxide stands at 0.86Mt at 2.17g/t gold for 60,000oz. This updated Mineral Resource will be incorporated in the Definitive Feasibility Study (DFS) due for completion next month.

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This announcement for the Red Oxide tailings dump represents the last of four resource updates on the tailings dumps at Mount Morgan. The previous resource updates for the No 2 Mill, Mundic Gully and Shepherds Gully tailings dumps were announced previously (ASX: 18 July 2016, 27 July 2016, 1 August 2016). These updates include the results from the recently completed drilling program in May 2016 (ASX: 1 June 2016).

A total of 16 drill holes were completed at the Red Oxide tailings dump in 2016 to both convert the Inferred Resources to Indicated Resources and to increase the overall resource by testing for potential extensions to the known resource.

At that time, the Red Oxide tailings dump had a total Mineral Resource of 0.84Mt at 2.19g/t gold, including 0.39Mt at 2.23g/t gold in the Indicated Resource Category and 0.45Mt at 2.15g/t gold in the Inferred Resource Category (Norton Gold Fields Limited ASX announcement 28 October 2009).

The new total Inferred and Indicated Mineral Resource for Red Oxide is 0.86Mt at 2.17g/t gold for 60,000oz (Table 1). This new total Mineral Resource represents a 2% increase (1,000 ounces) compared with the previous Mineral Resource in 2009.

In addition, the Red Oxide tailings dump Indicated Mineral Resource contains an estimate of 2,500 tonnes of copper and 500 kilograms of silver.

Table 1. Carbine Resources JORC 2012 Mineral Resource Table (reported at a 0.00g/t cut-off)

Area	Type	Category	Tonnage (Mt)	Gold (g/t)	Gold (Koz)	Copper (%)	Copper Metal (t)	Silver (g/t)	Silver Metal (kg)	Sulphur (%)	Pyrite Equiv. (wt %)
No 2 Mill	Sulphide	Indicated	2.71	1.11	97	0.12	3,184	1.14	3,078	13.7	25.6
	Oxide	Indicated	0.12	0.80	3	0.05	55	1.80	207	4.0	
Mundic Gully	Sulphide	Indicated	1.70	1.91	104	0.17	2,822	0.90	1,533	10.5	19.6
	Sulphide	Inferred	0.02	1.86	1	0.24	40	1.24	21	10.6	19.9
Shepherds	Sulphide	Indicated	4.83	0.84	131	0.17	8,195	1.42	6,889	12.4	23.2
Red Oxide	Oxide	Indicated	0.83	2.17	58	0.30	2,495	0.60	499	0.6	
	Oxide	Inferred	0.03	2.05	2	0.29	85	0.58	17	0.5	
Total Indicated	**Total Indicated**	**Indicated**	**10.19**	**1.20**	**394**	**0.16**	**16,750**	**1.20**	**12,207**	**11.4**	
	Sulphide	*Indicated*	*9.24*	*1.12*	*333*	*0.15*	*14,200*	*1.24*	*11,500*	*12.4*	*23.2*
	Oxide	*Indicated*	*0.95*	*2.00*	*61*	*0.27*	*2,550*	*0.74*	*706*	*1.0*	
Total Inferred	**Total Inferred**	**Inferred**	**0.05**	**1.98**	**3**	**0.28**	**125**	**0.82**	**37**	**4.2**	
	Sulphide	*Inferred*	*0.02*	*1.86*	*1*	*0.24*	*40*	*1.24*	*21*	*10.6*	*19.9*
	Oxide	*Inferred*	*0.03*	*2.05*	*2*	*0.3*	*85*	*0.58*	*17*	*0.5*	

(No 2 Mill, Mundic Gully and Red Oxide – Carbine Resources Limited ASX announcements 18 July 2016, 27 July 2016 and 1 August 2016)

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Resource Summary

The tailings at the Red Oxide tailings dump have been built during the historical mining and processing of the oxide ore from the 10 million ounce Mount Morgan gold-copper orebody. Historical records suggest over 6.0Mt of oxide tailings were deposited into the Mundic and Linda Gullies in the early 1900's. It is unknown how much of this dump material has been reprocessed or how much has been eroded downstream and/or deposited into the nearby Dee River.

Red Oxide tailings consist of silica, iron oxides and hydroxides. Tailings are deposited as horizontal layers. Thick metallurgical slag waste material generally overlies the tailings dump, and thus most of the gold mineralisation (tailings) starts from a depth of twenty metres.

The new Resource estimate is based upon a variety of drilling techniques due to the difficulty of penetrating through the overburden slag. Drill types have included RC, Aircore, TUBEX, ODEX and ROBIT, with the majority of drill holes being RC. A total of 65 drillholes intersected the Red Oxide tailing dump mineralisation, including 20 holes completed by Carbine Resources in 2015 and 2016, and 45 holes by previous owners.

Sample intervals were generally one metre in length. Carbine Resources collected the entire sample (approximately 15 kg) and transferred it to the sample preparation lab where it was dried, crushed to 2mm and sub-sampled to 3 kg. This 3kg sample was then pulverised to 74 microns and assayed by collecting 50g aliquots for fire-assay of gold, and silver, copper, iron and sulphur using ICP-AES. Sample duplicates show excellent repeatability of gold assays (98% correlation). Historic holes have been validated by drilling of twin holes by Carbine Resources.

The detailed topographic surface has been obtained by a 2016 LIDAR airborne survey. The upper and lower contacts of the Red Oxide tailings mineralisation were interpreted from geological logging of the drill holes and wireframed creating a closed 3D volume (solid).

A high grade cut-off of 5.5 g/t gold was applied to the composited samples.

Dry bulk density was measured using the sand replacement method from trenches covering both sulphidic and oxide tailings. A bulk density of 1.42 t/m^3 is assigned to red oxide tailings and a bulk density of 3.0 t/m^3 was assumed for slag.

The Resource for the tailings was estimated as a 3D block model for all five elements, Au, Ag, Cu, Fe and S using Ordinary (1st pass) and Simple (2nd pass) Kriging. Gold exhibits a good spatial continuity which was confirmed by robust 3D directional variograms.

The Resource was estimated as blocks of dimension 20 x 20 x 2m which were sub-celled into 2 x 2 x 0.5m sub-blocks. Estimation was made using a narrow horizontally oriented search ellipse:
- Pass 1: 50 x 50 x 4m (966 blocks estimated)
- Pass 2: 80 x 80 x 8m (200 blocks estimated)

The estimated Resource is reported at a zero cut-off (0.00 g/t Au) to reflect the planned mining and processing of 100% of the tailings. Reporting at a cut-off grade of 0.50g/t does not change the mineralisation grade nor contained metal.

Classification into Indicated and Inferred Resources is based on drill hole spacing. Geostatistically estimated uncertainty using the Sequential Gaussian Conditional Simulation method has shown that a drilling grid of 40 x 40m is sufficient for the estimation of Indicated Resources. Inferred Resources are estimated using an approximate 80 x 80m drilling grid.

Full details of the JORC Code 2012 reporting criteria and input parameters used to estimate the Resource are provided in Appendix 1.
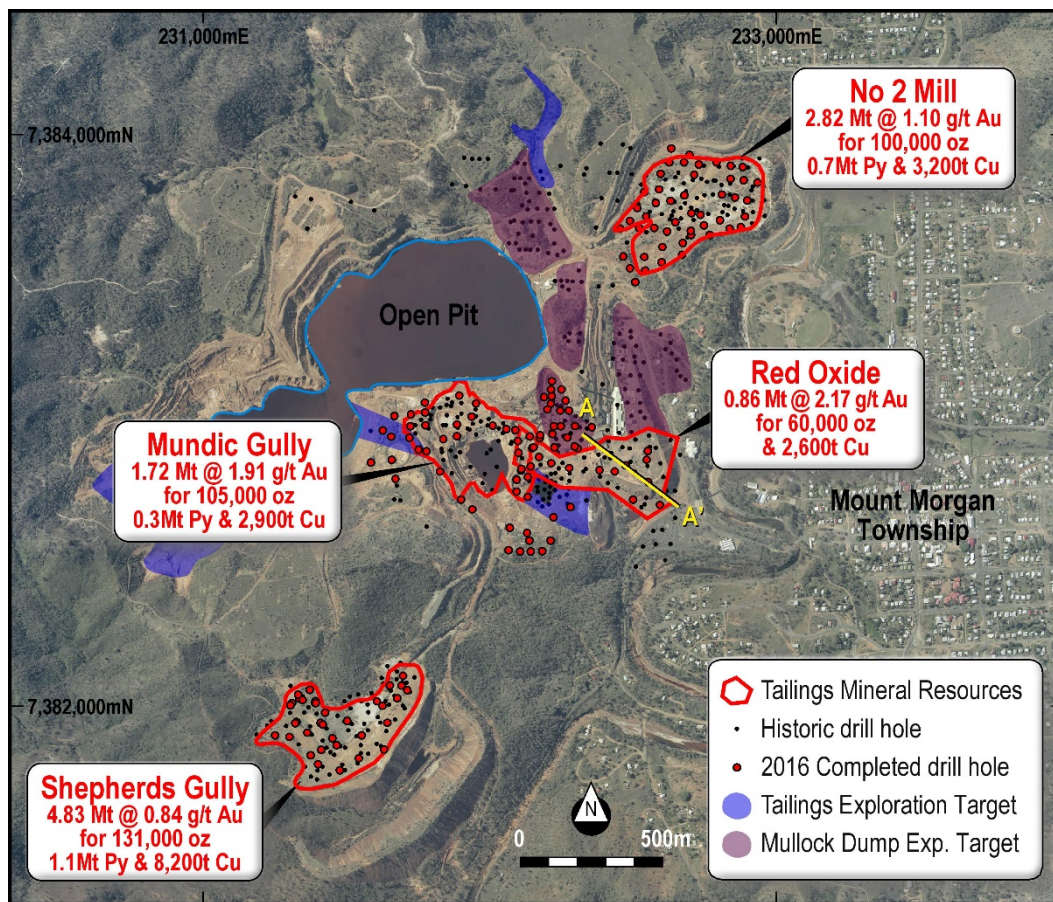
Figure 1. Plan view of the JORC 2012 tailings dump Mineral Resources.
Location of the following cross section shown as A-A'.
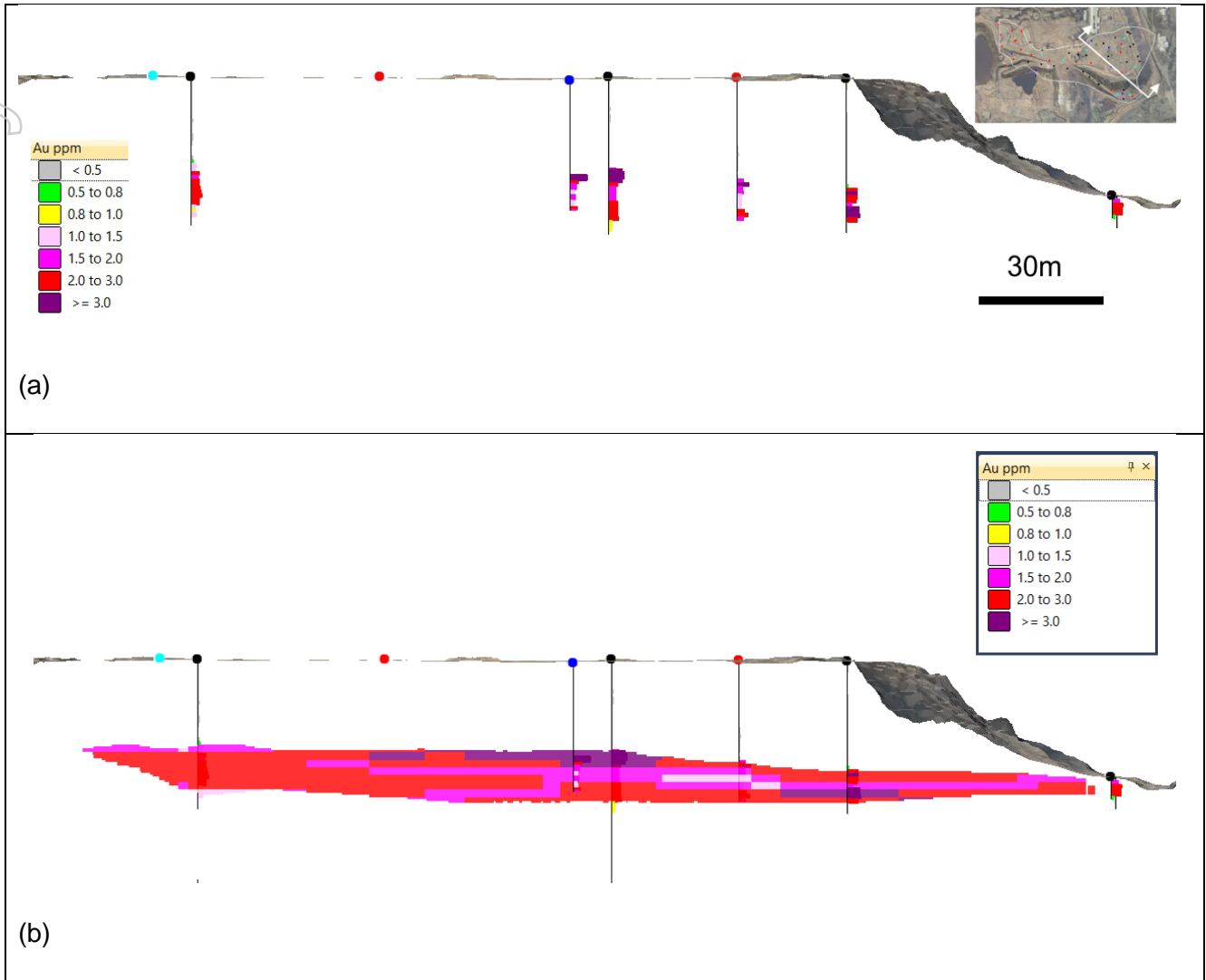
Figure 2. Oblique cross-section through the tailings showing comparison between drill hole grade (a) and block model grade (b)

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Competent Person Statement

The information in this report that relates to the JORC 2012 Mineral Resources is based on information compiled by Dr M. Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr M. Abzalov is a Fellow of the Australasian Institute of Mining and Metallurgy. He has sufficient experience in estimation of resources of gold mineralisation, and has a strong expertise in the all aspects of the data collection, interpretation and geostatistical analysis to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves'. Dr M. Abzalov is independent consultant, contracted to Carbine Resources for providing the technical guidelines for resource definition drilling at the Mount Morgan tailings project and in estimating the Mineral Resources. Dr M. Abzalov consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. The information for No 2 Mill, Mundic Gully and Shepherds Gully was prepared and first disclosed under the JORC Code 2012 in the ASX announcements 18 July 2016, 27 July 2016 and 1 August 2016, and all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed since they were last reported.

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Reporting criteria presented in the Section 1 of the JORC Table 1

(Sampling techniques and data)

Criteria of JORC Code 2012	Explanation given in the JORC Code 2012	Comments / Findings
(1.1.) Sampling techniques	☐*Nature and quality of sampling (eg cut channels, random chips, or specific specialized industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	The main data used for the resource estimation of tailings were RC and aircore samples. The resource database contains 65 drill holes, 20 of these holes were drilled in 2015 and 2016 by Carbine Resources. In total, 450 samples were used in the estimation from the 65 drillholes. Carbine drilling completed over the western edge of Red Oxide was completed by a Universal RC/Diamond drill rig (UDR650) equipped to collect the full sample through the cyclone or alternatively by PQ triple tube coring. Hole diameter 4.75 inches in the case of RC and PQTT (83mm). Samples are collected regularly, at 1m intervals. Carbine drilling completed over the bulk of Red Oxide utilised a custom built J&S Drilling rig with capacity to drill overburden and precollar with TUBEX or ROBIT gear of varying diameter bit/casing configuration to allow telescoping down (TUBEX 190mm comprising pilot bit at 190mm and excentric reamer to 237mm then TUBEX-115mm or TUBEX 190MM/ROBIT 168.3mm gear with casing shoe to 127.5mm) with capacity to continue sampling tailings with this gear or with aircore at <115mm bit diameter. Historical holes were mostly RC, with some aircore drilling.
	☐*Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	All drilling is vertical, which is optimal for flat lying tailings, dump, and slag mineralization. 1m samples are well suited for estimation of resources for the mineralised tailings

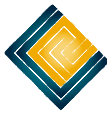|		
	☐ *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	Carbine drilling and sampling procedures were performed using above industry standard techniques and equipment. 1m samples were collected in total with average sample size around 15-20kg and transported in its entirety to Preplab at Rockhampton. The split of the sample was obtained in the initial sample preparation stage following drying of entire sample, crushing to 2mm and rotary splitting to 2 x 3kg splits and duplicate. Entire subsample (3kg) is pulverised using LM5 pulveriser requiring manual feeding. Sampling protocol is based on sampling nomogram constructed using theoretically deduced fundamental sampling error. Previous historical holes back to 2008 were re-assayed using the same process. Sampling protocol prior to this timeframe is unknown.
Drilling techniques (1.2.)	☐ *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Carbine drilling completed at the western edge of Red Oxide was completed by a Universal RC/Diamond drill rig (UDR650) equipped to collect the full sample through the cyclone or alternatively by PQ triple tube coring. Hole diameter 4.75 inches in the case of RC and PQTT (83mm). Samples are collected regularly, at 1m intervals. Drilling completed over the bulk of Red Oxide utilised a custom built J&S Drilling rig with capacity to drill overburden and precollar with TUBEX or ROBIT gear of varying diameter bit/casing configuration to allow telescoping down (TUBEX 190mm comprising pilot bit at 190mm and excentric reamer to 237mm then TUBEX-115mm or TUBEX 190MM/ROBIT 168.3mm gear with casing shoe to 127.5mm) with capacity to continue sampling tailings with this gear or with aircore at <115mm bit diameter. The majority of historical holes are RC with minor aircore drilling.

Drill sample recovery (1.3.)	☐Method of recording and assessing core and chip sample recoveries and results assessed.	Obtained samples were weighed in the preparation laboratory in Rockhampton which was used as a non-direct control for possible sample loss.
	☐Measures taken to maximise sample recovery and ensure representative nature of the samples.	This was based on adjusting the drilling parameters to obtain the best recovery by collection and processing of the entire sample. Coring was preferred where tailings were unconsolidated and overly soft for effective collection by RC technique.
	☐ Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No bias is expected as tails mineralization is relatively uniform in grainsize and nature.
Logging (1.4.)	☐ Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	The drill hole samples have been geologically logged to a level of detail to support appropriate Mineral Resource estimation. Geological logging concentrated on the diagnostic of tailing materials. Tails had to be logged separate from the surficial material, which was classified as either 'mixed', mullock waste rock, subsurface gravels, metallurgical slag or basement rocks. Oxidised or Sulphidised tailings were identified separately. Documentation also includes description of mineralogy, weathering, and moisture.
	☐ Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Qualitative logging, primarily focused on the diagnostic of tailing materials.
	☐The total length and percentage of the relevant intersections logged.	100% of intersections were logged
Sub-sampling techniques and sample preparation (1.5.)	☐ If core, whether cut or sawn and whether quarter, half or all core taken	Where applicable, full core samples were collected.
	☐ If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	RC samples were collected in entirety to be subsequently dried, then crushed and split by rotary splitting into 3kg sub-samples for assay.
	☐ For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sampling and sample preparation protocols were optimised by construction of the sampling nomogram minimising the Fundamental Sampling Error.

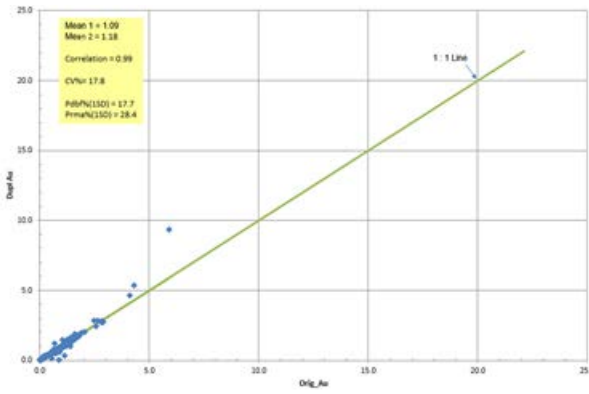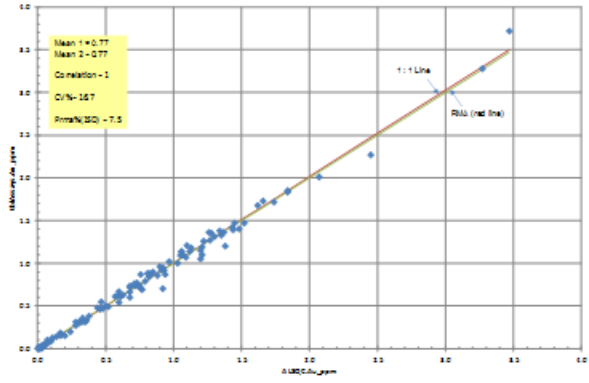**CARBINE RESOURCES**
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		Initial sample preparation involving drying, crushing and rotary splitting was undertaken by Preplab of Rockhampton. 3kg splits were freighted to ALS Townsville for remaining preparation following the standard post-crushing preparation technique. Samples (3kg) are pulverised using LM5 pulveriser requiring manual feeding.
		Aliquots are dissolved using 4 acid digest (near complete dissolution) and peroxide fusion (complete dissolution). Results are compared one digest against the other.
		The preparation approach, is standard and commonly used for medium grade gold mineralisation
	☐ *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	For all subsampling stages, duplicate samples are collected and analysed. Namely, these coarse field duplicates (5-7%) after first splitting make 2mm size fraction, and pulp duplicates (>3%) after entire collected subsample is pulverized. QA/QC procedures also include using standard samples and blanks.
	☐ *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	Field duplicates and twin holes have been incorporated into the entire drill program.
	☐ *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Sample size is 15-20kg. Further subsampling is made strictly following optimal sampling protocols. According to estimates, this will achieve precision error less than 10% which is considered excellent for gold mineralisation.
Quality of assay data and laboratory tests (1.6.)	☐ *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	Samples were assayed at the ALS laboratory. Gold was assayed using conventional fire-assay method with AAS finish. Reported detection limit is 0.01 g/t Au.
		Cu, Ag, Fe and S have been analysed by ICP-AES by ALS Townsville by method ME-ICP41 (post aqua regia digestion) to determine levels of chalcopyrite and pyrite. Detection limits are Ag- 0.2ppm; Cu-1ppm; Fe- 0.01% and S- 0.01%.

	☐ *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	Not applicable
	☐ *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	Quality control procedures include: • Twin holes • Field duplicate samples. Correlation (rho) 0.98 • Pulp (lab) duplicates. Correlation (rho) 1.00

		Duplicate samples analysis has shown an excellent repeatability of the gold assays. Correlation coefficients are 0.98 for field (coarse) duplicates and 1.0 for lab (pulp) duplicates. Coefficients of variations (CV) of the data pairs are 17.8% and 18.7%. These results are considered excellent for gold mineralisation. Standards and blanks are incorporated into batches at greater than one standard or blank per 10 samples. No significant issues were identified.
Verification of sampling and assaying (1.7.)	☐ *The verification of significant intersections by either independent or alternative company personnel.*	Verification of all results was undertaken after a site visit by the Geology Manager – Carbine. Gold grade of the Red Oxide tailings is relatively uniform therefore the concept of significant intersections is not applicable.
	☐*The use of twinned holes.*	Several twin holes were drilled to confirm the validity of the historic data. Good repeatability is observed.
	☐ *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	Assays are obtained from the ALS laboratory in electronic form and stored in a special folder created on the Carbine Resources Server.
	☐ *Discuss any adjustment to assay data.*	No adjustments were needed. Assay results are reported as obtained from the lab.

Location of data points (1.8.)	☐ Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Hole collars were surveyed in MGA94 Zone 56 grid by certified surveyors using differential GPS. Historical hole collars were also validated by recent re-surveying of hole collars where they were able to be located.
	☐ Specification of the grid system used.	All coordinates are recorded as MGA (GDA94) zone 56 (south).
	☐ Quality and adequacy of topographic control.	Pre-mining topographic surface prepared from detailed ground and mine surveys completed historically. Current topographic surface prepared from 2016 airborne LIDAR survey.
Data spacing and distribution (1.9.)	☐ Data spacing for reporting of Exploration Results.	Not applicable
	☐ Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Drill holes are distributed as approximately 40x40m grid. The purpose of this drilling is to convert Inferred to Indicated Resources and add additional Mineral Resources through near-mine extensions.
	☐ Whether sample compositing has been applied.	No physical compositing of the samples has been applied in the field. Most of the samples represent 1m down-the-hole intervals. To assure the statistical representivity of the resource estimation data, the original samples were composited to 1m composites in the resource estimate.

Orientation of data in relation to geological structure (1.10.)	☐ *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	All drill holes were drilled vertically which provides the best possible intersection to the flat lying mineralised tailings.
	☐ *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Not applicable. Drill hole intersects the tailings at 90 degrees.
Sample security (1.11.)	☐ *The measures taken to ensure sample security*	Sample bags were collected by the Carbine Resources representative and delivered to the lab. The samples were not left unattended on site. The pulps are kept in a secure place in the laboratories as per internal security procedures of the ALS.
Audits or reviews (1.12.)	☐ *The results of any audits or reviews of sampling techniques and data.*	The historic data were reviewed in 2008 by Coffey Mining specialists who found them acceptable for resource estimation. Site visits and review were undertaken by Carbine personnel at both the Rockhampton sample preparation lab and Townsville ALS laboratory. No significant issues were identified.

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Reporting criteria presented in the Section 2 of the JORC Table 1

(Reporting of Exploration Results)

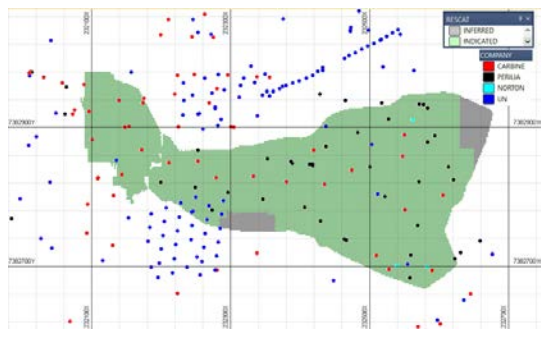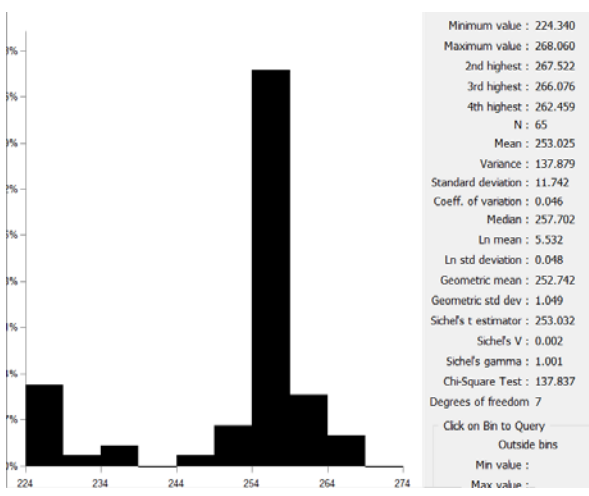| Criteria of JORC Code 2012	Explanation given in the JORC Code 2012	Comments / Findings
Mineral tenement and land tenure status (2.1)	☐*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	The *Mount Morgan* project has been secured by *Mining Leases: ML 5589, ML 5602, ML 5608 – ML 5069, ML 5612 – ML 5628, ML 5633 – ML 5635, ML 5648, ML 5649, ML 5658 – ML 5660, ML 6692 issued to the* Norton Gold Fields Limited. Carbine Resources entered an initial JV agreement with Norton Gold Fields Limited. There is no known native title related restrictions nor known environmental or social obstructions. Some areas of the site are currently listed on the Queensland Heritage Register, in particular several buildings that lie immediately north of the Red Oxide tailings. 12% of the total Red Oxide Mineral Resource and 10% of the Red Oxide Indicated Mineral Resource lies outside the current mining lease boundary. This material will be incorporated into mine planning studies, as it is assumed that full environmental reclamation of this material is required on behalf of the Queensland Government environmental clean-up.
	☐ *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	*All MLs expire on the 31/08/2025*
Exploration done by other parties (2.2)	☐ *Acknowledgment and appraisal of exploration by other parties.*	The tailings have been deposited from over a hundred years of mining and processing. In-pit tailings have been historically processed in the 1980's. Several parties have explored and tested the remaining untreated tails over the last twenty years. Most recently (2009) Norton Gold Fields Limited completed preliminary due diligence of treating the tails mineralization, however the

		tailings were only partially drill tested and the economic significance was not fully assessed.
Geology (2.3)	☐ *Deposit type, geological setting and style of mineralisation.*	The historic tailings from the processing of primary and oxide gold-copper-pyrite ores from the Mount Morgan mine. Shape of the tailings dams represents the actual contacts of the mineralisation.
Drill hole Information (2.4)	☐ *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*	Not applicable. Mineralised tailings are estimated and reported as Mineral Resources. In total, 65 drillholes are used for estimation, distributed as approximately 40 x 40m random-stratified grid.
	☐ *Easting and Northing of the drill hole collar.*	
	☐ *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar.*	Average RL = 253 m
	☐ dip and azimuth of the hole.	All holes drilled vertically down (Dip -90 degrees)
	☐ *down hole length and interception depth*	Interception length is matching to the tailings thickness, in the range of 1 - 14m. Average thickness is approximately 8 m.

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	☐ *hole length.*	Average length of the drillholes completed by Carbine Resources is 25.3 m. The holes completed by previous owners is similar, except for several deeper drill holes exceeding 200m.
	☐ *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	Not applicable.
Data aggregation methods (2.5)	☐ *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*	Not applicable
	☐ *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	Not applicable
	☐ *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Not applicable
Relationship between mineralisation widths and intercept lengths (2.6)	☐ *These relationships are particularly important in the reporting of Exploration Results.* ☐ *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	Not applicable. There is no relationships between tailings depth and mineralisation grade. Mineralisation is distributed as a flat lying bed in the tailings dam. All drill holes are vertical and intersect the mineralisation approximately orthogonally providing the good estimate of the true thickness of mineralisation
	☐ *If it is not known and only the down hole lengths are reported, there should be a clear statement to*	Not applicable

	this effect (eg 'down hole length, true width not known').	
Diagrams (2.7)	☐ *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	See Figures within the ASX announcement.
Balanced reporting (2.8)	☐ *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Mineralisation distributed at the Red Oxide tailings dump is estimated and reported as a Mineral Resource.
Other substantive exploration data (2.9)	☐ *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Metallurgical recovery of the tailings has been extensively carried out by Carbine over several phases from 2014 to 2015. The phase 3 testwork for the pre-feasibility study provided the generation of three products – gold bullion, copper sulphate and a premium grade pyrite concentrate. 76% gold recovery, 90% pyrite recovery and 68% copper recovery (ASX: 23rd July, 2015). Red oxide tailings are blended with sulphidic tailings. Testwork suggests a 74% gold recovery and 51% copper recovery. Deleterious elements are considered very low in the Mt Morgan deposit. Mining and processing of the sulphidic tailings will improve the environmental legacy held by the Queensland Government for the Mt Morgan site.
Further work (2.10)	☐ *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*	No additional drilling is immediately required. This data will be a basis for the project's definitive feasibility study.
	☐ *Diagrams clearly highlighting the areas of possible extensions, including the main geological*	Exploration target areas for both mineralized tailings and historic mineralized waste dumps are highlighted in Figure 1.

| *interpretations and future drilling areas, provided this information is not commercially sensitive.* | No significant changes to the current Red Oxide resource model is envisaged. The confidence in interpretation of the tailing's volume is based on the following data:

 • Mineralisation is constrained by the tailings dam walls,

 • Margins and the base of the tailings are defined by drilling, assuring that drillholes are intersecting the tailings. |

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Reporting criteria presented in the Section 3 of the JORC Table 1 (Estimation and Reporting of Mineral Resources)

Criteria of JORC Code 2012	Explanation given in the JORC Code 2012	Reference to the Current Report
		Comments / Findings
Database integrity (3.1)	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	Drill hole samples was collected by experienced personnel. Sample numbers have been recorded on the sample bags and sample tickets. The Supervising Geologist undertook cross-checking of the list of samples and the sample numbers and based on these, the list of the samples in the batch was prepared to accompany the samples. Lab personnel, after receiving the samples, have checked the sample numbers versus the list of the samples reported in the assay request form. All further transfers of the assay results were made electronically and supported by the paper copies for ensuring that data has not been corrupted by electronic data transfer.
	• *Data validation procedures used.*	Obtained assays are reviewed and authorised by the Geology Manager before transfer to the database. After the data is entered into the database, it gets subsequently reviewed by the database administrator. The database is located on the company server which is regularly (daily) backed up. Individual data was verified by comparing field duplicates

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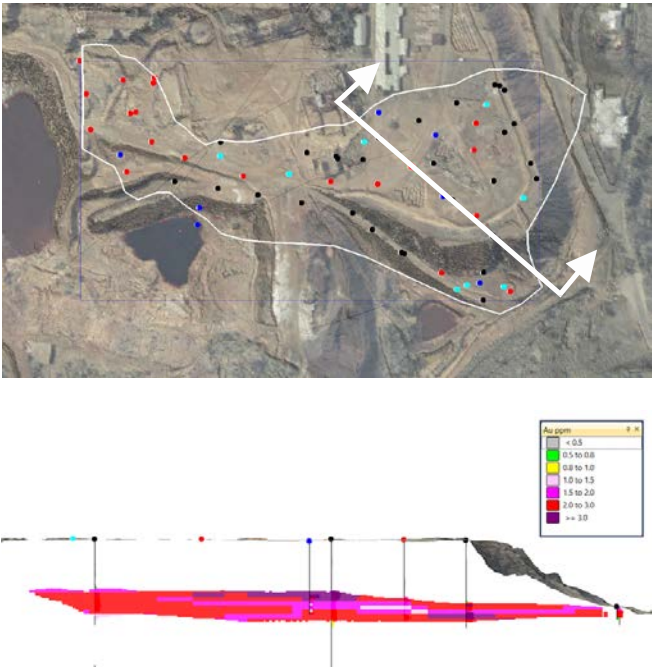
		Correlation of the gold grades between the field duplicates is rho=0.98, which is excellent for gold mineralization.
Site visits (3.2)	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Dr. M. Abzalov (CP of the project) visited the project site in December, 2015 and in April, 2016. He assisted in setting the sampling and logging procedures, safe storage of samples and the shipment procedures to the lab. The procedures of data transfer between sites has been arranged and checked throughout the course of the project.
	• *If no site visits have been undertaken indicate why this is the case.*	Not applicable
Geological interpretation (3.3)	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The current interpretation is based on 65 drillholes distributed as a random-stratified grid of 40 x 40 m. All drillholes were sampled at 1m intervals and geologically logged. The available information, together with the detailed surface topography and the surface mapping of the tailing contacts have provided a sound base for the current geological interpretation.
	• *Nature of the data used and of any assumptions made.*	450 composites from 65 drill holes
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	There appears to be a limited scope for alternative interpretations, so their potential impact on the Red Oxide Tailing's Resource estimate is considered to be minimal
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	Understanding of the tailings deposition procedures has suggested the following interpretations, which were incorporated into the estimation procedures: • Red Oxide Tailings were modelled separately to sulphidic tailings (Mundic) based on logging of oxide tailings. • Tailings were infilled evenly creating horizontal layering to the mineralization. Therefore narrow and horizontally oriented search ellipses were used in estimating the block model grades

	• *The factors affecting continuity both of grade and geology.*	The horizontal layered nature of the mineralisation is created by the tailing infilling procedures. The grade continuities have been quantified by estimating the variograms of the main metals (Au, S, Fe, Ag, Cu)
Dimensions (3.4)	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Red Oxide tailings dump is elongated in the East-West direction with a width varying from 110m to 275m (Figure). Length of the tailing is approximately 550m. Red Oxide Tailings underlie sulphidic Mundic tailings at its western margin.

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Estimation and modelling techniques (3.5)	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• Surface topography was created by wireframing the LIDAR survey data; • Mineralised tailings were constrained by a 3D wireframe. Upper and Lower contacts were interpreted from the drillhole logs, and the contact points were digitized and linked using a cross-sectional interpretation approach. • Wireframes were created using Micromine© • Mineralisation grades (Au, Ag, Cu, Fe, S) were estimated using Ordinary Kriging (1st Pass) and Simple (2nd Pass) techniques. All geostatistical studies were made using Isatis©
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	The previous estimate was made by Coffey Mining in 2008 and modified in 2009 by SMG Consulting (Norton Gold Fields Limited ASX announcement 28 October, 2009).The previous resource report included gold only. The results are compared in the table.

		Tonnage (Mt)	Grade (Au, g/t)	Au Metal (kg)	**Au Metal (Koz)**
CURRENT ESTIMATE	Indicated	0.83	2.17	1,811	58
	Inferred	0.03	2.05	59	2
	TOTAL	**0.86**	**2.17**	**1,870**	**60**
SMG (2009)	Indicated	0.39	2.23	870	28
	Inferred	0.45	2.15	957	31
	TOTAL	0.84	2.19	1,826	59

Pre-1927, Mt Morgan production records show more than six million tonnes of oxide tailings was produced. The extent to which this material has been re-processing or lost into the Dee River is unknown.

	• *The assumptions made regarding recovery of by-products.*	Two products generated from oxide tailings - gold (and silver) bullion and copper sulphate. Testwork suggests a 74% gold recovery and 51% copper recovery.
	• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*	All post 2008 samples have been assayed for Au, Ag, Cu, Fe and S. Oxide tailings are considered benign for acid-rock drainage. Overburden slag is also considered benign.

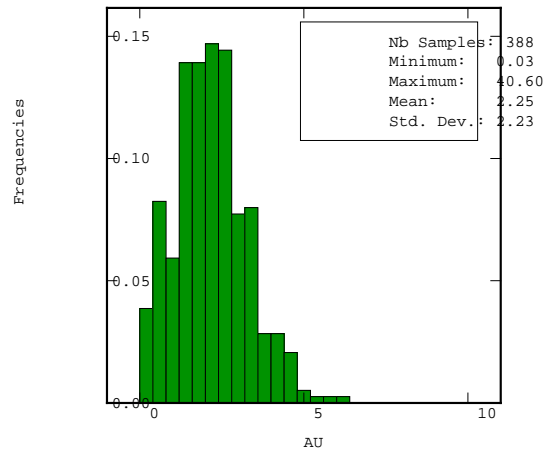|		
		Contents of other potentially deleterious components (arsenic, antimony) is negligible in the primary Mt Morgan deposit.
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	Drillholes are distributed approximately as 40 x 40m grid and they were sampled at 1m intervals. Blocks (parent cells) are 20 x 20 x 2m, which is sufficient to obtained accurate estimate using Ordinary Kriging technique. The blocks are subdivided into the sub-blocks down to 2x2x0.5m, assuring accurate filling of blocks into the wireframe.
	• *Any assumptions behind modelling of selective mining units.*	It is assumed that tailings will be mined by 4m benches, which locally can be split into 2m flitches. Thus, the mining selectivity is likely to be in the range of 10x10x2m to 20 x 20 x 4m. The block model parameters used in the current estimate are in a good accordance with the envisaged mining selectivity. It is also noted that previous estimates made by Coffey in 2008 used similar block model parameters. Their parent blocks were 25x25x2m.
	• *Any assumptions about correlation between variables.*	Copper correlates with Iron (rho=0.81) Gold has a weak correlation with Silver (rho = 0.60) and Iron (rho = 0.52), suggesting that, in general, gold associates with iron oxides (after pyrite). Correlation between other variables is lacking.
	• *Description of how the geological interpretation was used to control the resource estimates.*	Understanding of the tailing geology and infilling procedures has been incorporated into the estimation procedures: Tailings were infilled evenly creating horizontal layering of the mineralisation, therefore narrow and horizontally oriented search ellipses were used in estimating the block model grades

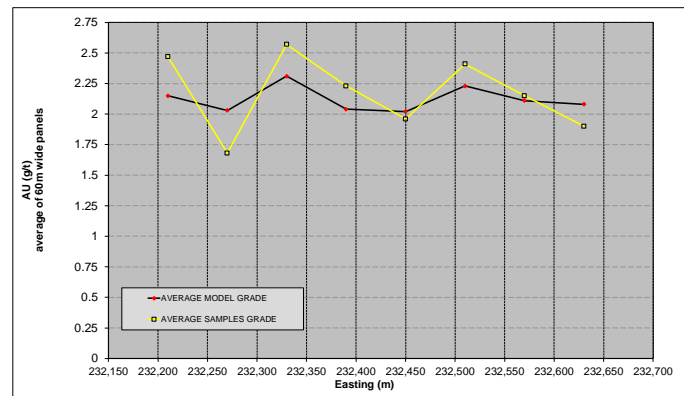|	• *Discussion of basis for using or not using grade cutting or capping.*	A high grade cut-off was applied to composited samples of 5.5 g/t Au.
		Nb Samples: 388 Minimum: 0.03 Maximum: 40.60 Mean: 2.25 Std. Dev.: 2.23
		Other metals (Ag, Cu, Fe) and Sulphur did not contain any outliers and no high-grade cutting was applied.
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	Block grades were compared with the drill holes.
		All data were grouped into 100m wide panels drawn across the entire tailings. The average grades of the panes in the panel were estimated from blocks within the panel and plotted vs. coordinates of the corresponding panel. This was compared with average grade of the samples located in the same panel.
		The same procedure was repeated in the vertical direction when block and sample grades were grouped by 2m horizontal layers (benches) drawn across the entire tailings.

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Results presented on the diagrams show that average grades of the block model in the panels (and/or benches) are similar to the average grade of the samples in the corresponding panels/benches.

The tests convincingly validates the current estimate confirming its level of accuracy. |
| | | No alternative estimates were made in this study |
| *Moisture (3.6)* | ● *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.* | Dry bulk density was measured using the sand replacement method, which was applied to the tailings exposed in the specially excavated trenches.

In total, 18 measurements were taken, including 14 of the sulphidic tailings and 4 oxide tailings

- Mundic (fresh) - 4 measurements
- Shepherd's (fresh) - 6 measurements
- No 2 Mill (fresh) - 4 measurements
- No 2 Mill (oxide) - 2 measurements
- Red Oxide (oxide) - 2 measurements

Based on this study the DBD values used for estimating resources were as follows: |

		• Pyritic tailings – 1.76 t/m3 • Oxide tailings – 1.42 t/m3 Moisture is determined as the difference between the wet and dry measurements
Cut-off parameters (3.7)	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	The upper contact (hanging wall) of the mineralised tailings was determined by logging the drillhole cuttings. The same approach was used for definition of the tailings bottom (footwall contact). Resources were reported at zero gold cut-off grade, because the production plan requires extraction and processing of all tailings material for final environmental reclamation. Reporting at a cut-off grade of 0.50g/t does not make any material change to the resource.

cut-off	Tonnage (Mt)	Grade (Au, g/t)	Au Metal (kg)	Au Metal (Koz)
0.00	0.86	2.17	1,870	60
0.25	0.86	2.17	1,870	60
0.50	0.86	2.17	1,870	60
0.75	0.86	2.17	1,866	60
1.00	0.83	2.21	1,845	59
1.25	0.80	2.26	1,803	58
1.50	0.74	2.33	1,719	55
2.00	0.51	2.58	1,327	43

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Mining factors or assumptions (3.8)	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Tailings have been partially mined in the past, therefore their amenability to open pit mining is well understood and confirmed by past production.
Metallurgical factors or assumptions (3.9)	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	The project flowsheet incorporates the upfront extraction of copper via resin-in-leach, followed by pyrite flotation to a saleable concentrate, and finally gold extraction by carbon-in-leach. Metallurgical recovery of the tailings has been extensively carried out by Carbine over several phases from 2014 to 2015. The phase 3 testwork for the pre-feasibility study provided the generation of three products – gold bullion, copper sulphate and a premium grade pyrite concentrate. 76% gold recovery, 90% pyrite recovery and 68% copper recovery (ASX: 23rd July, 2015). Red oxide tailings are blended with sulphide tailings, with testwork suggesting a 74% gold recovery and 51% copper recovery.

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Environmental factors or assumptions (3.10)	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	Mining license includes all necessary environmental permits for mining and processing of the tailings. A special requirement is the extraction of all tailings material disturbed to eliminate the acid-waste drainage from these tailings. This condition has imposed the necessity to report resources at the zero grade cut-off. Sulphidic waste overburden is assumed to be encapsulated in benign reprocessed tailings.
Bulk density (3.11)	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	Dry bulk density was measured using the sand replacement method. The method is certified in Australia (Australian standards - AS1289.5.3.1) for measuring densities of the soft materials. It was applied to the tailings which were exposed in the specially excavated trenches. In total, 18 measurements have been made, including 14 of the pyritic tailings and 4 oxide tailings • Mundic (fresh) - 4 measurements • Shepherd's (fresh) - 6 measurements • No 2 (fresh) - 4 measurements • No 2 (oxide) - 2 measurements • Red Oxide (oxide) - 2 measurements Based on these study the DBD values used for estimating resources were as follows:

		• Pyritic tailings – 1.76 t/m3
		• Oxide tailings – 1.42 t/m3
	• The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	Sand replacement method was applied rigorously following the procedures described in the Australian standards manual (AS1289.5.3.1)
	• Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	Average density values have been used in the resource estimation, despite the variations of the measured results. Use of the average values was necessary because the number of measurements was insufficient for estimating the local density.
Classification (3.12)	*• The basis for the classification of the Mineral Resources into varying confidence categories.*	Classification is based on geostatistically estimated uncertainty of the gold grade. The uncertainty was estimated using Sequential Gaussian Conditional Simulation method applied to the Shepherd's tailings. Results shows that using a drilling grid of 40 x 40m will allow estimation of grade for large blocks (350 x 350 x 5m) with an error less than +/-15% (at 0.95 confidence limits). The chosen block size is matching the annual production volumes proposed for the tailings. Figure: Histogram of the annual production block (350x350x5m) grade uncertainties (at 0.95 confidence limit)

		This level of uncertainty, applied to the blocks representing the annual production from the tailings is in good accordance with the industry practices for classification endowment as Indicated Resource.
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	All relevant factors have been reviewed and reported
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	Dr. M.Abzalov (the project's CP) is fully satisfied with the results of the estimation, including geometry/volume of the mineralised tailings, density and grade.
Audits or reviews (3.13)	• *The results of any audits or reviews of Mineral Resource estimates.*	Review by the Carbine Resources' Geology Manager has approved the evaluation methodology used by Dr.M.Abzalov and concords with the results.
Discussion of relative accuracy/ confidence (3.14)	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	A Conditional Simulation study undertaken in 2015 using the data from the Shepherd's tailings has shown that using a drilling grid of 40 x 40m will allow estimation of grade of the large blocks (350 x 350 x 5m) with an error less than +/-15% (at 0.95 confidence limits). A drill density of 40m x 40m is deemed appropriate given the nature of the tailings mineralisation.

	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	Gold grade uncertainty was estimated using Conditional Simulation (Sequential Gaussian Simulation) method for the blocks, corresponding to annual (12 months) production volumes.
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	No historical production data for re-treatment of the red oxide tailings has been identified. Historical records show a grade of 2.2g/t, in line with this resource estimate.