

9 June 2015

# EXTENSIVE ZONE OF SEDIMENT HOSTED HIGH-GRADE COPPER OUTLINED AT McARTHUR RIVER PROJECT, NT

Sampling outlines large continuous stratiform zone with assays up to 47.8% Cu, 68g/t Ag, 2220 Bi

#### **HIGHLIGHTS**

- Extensive copper-silver-bismuth anomalous area outlined by mapping and sampling
- A minimum of 600 x 400m area delineated with average of >10% Cu in rock samples plus high Ag and Bi
- Maximum assay results of 47.8% Cu, 68 g/t Ag and 2220 ppm Bi
- 25% of samples analysed returned values of greater than 10% Cu and 10 g/t Ag, with seven samples grading over 40% Cu and 40 g/t Ag
- Area remains open down-dip to the east and to the south and represents an outstanding drill target
- These results confirm the prospectivity of the McArthur River Project, which has been included in the spin-off of TNG's non-core base metal assets via Todd River Resources
- TNG continues to focus on its flagship Mount Peake Vanadium Project, where the Feasibility Study is in its final stages and progressing according to plan

Australian strategic metals company TNG Limited (ASX: TNG) is pleased to announce that it has delineated an extensive zone of high-grade surface copper mineralisation from mapping and rock chip sampling undertaken at its 100%-owned McArthur River Project in the Northern Territory (Figure 1).

The work was carried out while TNG continues its primary focus on the completion of the Feasibility Study on its flagship Mount Peake Vanadium Project, which is continuing to progress on schedule and according to plan. Updates on this work, including the TIVAN® pilot testwork, are expected with the completion of each phase and after assessment and review of results.

A program of field mapping, soil sampling and rock chip sampling was conducted at the McArthur River Project to follow up the high grade 48% copper analysis located during earlier reconnaissance sampling (see ASX Announcement – 16 February 2015). This work was conducted as part of the ongoing background assessment of the assets, which have been included in the recently approved demerger of Todd River Resources.

The field work has confirmed the very high prospectivity of the McArthur River Project, with these results indicating a newly discovered zone of sedimentary-hosted stratiform copper-silver mineralisation which represents a significant exploration target and potential new mineralisation style for this area.

Sediment-hosted stratiform copper deposits are an important and economically attractive, world-class mineral deposit style. Examples of these are demonstrated by the super-giants of the Kupfershiefer in north-central Europe and the Copper Belt of Central Africa.

The McArthur River Project is located 60km south-west of the world-class McArthur River Zinc Mine, operated by Glencore, and within the Batten Fault Zone, which hosts several other base metal resources including the recently outlined Teena deposit (Rox/Teck).

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The tenements are highly prospective and are being explored for both McArthur River-style zinc mineralization as well as stratiform and/or structurally-controlled copper mineralization within the Wollogorang Formation sequence, which is exposed over 17km of strike within the tenement package.

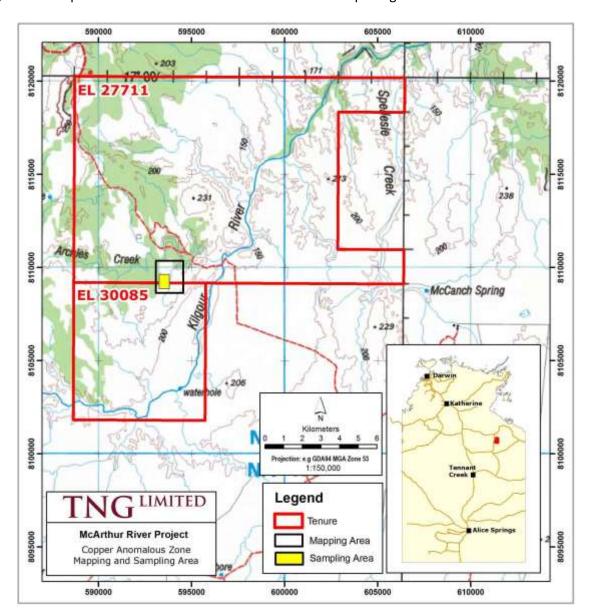


Figure 1. McArthur River Project location plan.

### **McArthur River Sampling Program**

Detailed geological mapping at 1:2500 scale was completed by TNG geologists year over an area of approximately 3 square kilometres (as shown in Figure 1). Systematic Portable XRF (pXRF) and -80# soil sampling and rock chip sampling was also undertaken with details outlined in Appendix 2.

48 rock samples were collected with all samples analysed for a 33-element suite. Results of greater than 1% copper are shown in Table 1 and results of all significant elements and sample coordinates are listed in Appendix 1. Significant copper results >40% Cu are shown in Table 2. Laboratory analysis of the rock samples returned a total of seven samples with >40% Cu, 12 samples greater than 10% Cu and 19 samples above 1% Cu. These results enhance and confirm the extent of the potential copper horizon.



Table 1. Significant rock chip sample results (>1% Cu.

SAMPLE	EASTING	NORTHING	Au	Ag	Bi	Cu	Мо	S
NUMBER	MGAZ53	MGAZ53	ppm	ppm	ppm	%	ppm	%
MC15001	593373	8109079	0.031	68	1050	48.3	30	1.76
MC15001D	593373	8109079				47.9		
MC15501	593375	8109090	0.089	41	1120	47.8	30	0.21
MC15502	593372	8109088	N.D.	57	1220	45.6	50	0.92
MC15503	593372	8109090	0.006	4	160	5.01	10	0.27
MC15504	593370	8109085	N.D.	1	30	1.54	<10	0.26
MC15505	593373	8109086	0.074	57	1290	47.7	30	0.91
MC15506	593376	8109081	0.037	46	1050	44.3	30	0.83
MC15507	593375	8109080	N.D.	46	1000	35.9	30	1.17
MC15508	593380	8109093	0.039	45	970	37.2	30	0.47
MC15509	593376	8109106	N.D.	18	420	15.25	10	0.18
MC15510	593372	8109098	0.009	9	180	6.02	10	0.23
MC15511	593498	8109393	N.D.	39	240	17.95	20	0.7
MC15526	593354	8109078	< 0.005	3	120	4.15	<10	0.21
MC15536	593268	8109518	0.076	48	2220	45.1	<10	1.53
MC15537	593273	8109512	0.068	48	2140	45.8	<10	1.61
MC15538	593273	8109508	0.099	47	2220	44.6	<10	1.57
MC15539	593286	8109531	N.D.	2	150	2.51	<10	0.28
MC15540	593276	8109535	N.D.	12	840	10.95	<10	0.61
MC15541	593281	8109544	0.011	3	170	1.99	<10	0.26
MC15542	593291	8109543	N.D.	5	230	4.10	<10	0.27

Table 2. Multi-element anomalism for the two sampling areas.

		Copper Results		Silver	Gold	Bismuth	Molybdenum	
		>40%	>10%	>1%	>10 g/t	>0.05 g/t	>250ppm	>=30ppm
Original Site	No. Samples (23)	4	7	11	8	2	8	7
	Maximum Value	47.80%			68	0.09	1220	50
Northern Breakaway	No. Samples (18)	3	5	8	5	3	4	0
	Maximum Value	45.80%			48	0.10	2220	

All anomalous samples came from a shale band in the lowermost Wollogorang Formation (Figure 2). This shale (Pto1) is approximately ten metres thick and bound below by the Settlement Creek Dolerite and above by a dolomite subunit within the Wollogorang Formation (Pto2).

The dolomite exposures are prominent, forming low (2-10m) breakaways with the shale poorly exposed on the scree slope below the breakaway (Plate 1). Stratigraphy in the area displays variable but shallow dips (0-20 degrees), mostly dipping towards the east.

Copper anomalism was found in **two main areas** (see Figure 2). A total of 23 samples were taken in the vicinity of the original sample at approximately 593,373mE 8,109,079mN. These samples were spread over an area of 150m by 120m and returned four (five including the original sample) assays of greater than 40% Cu. Seven samples returned values of greater than 10% Cu, while the eight samples showing more than 1% Cu were spread over an area of 30m by 50 metres.

An exposure of the shale along a NNE facing breakaway some 300-500m to the north returned three rock samples with >40% Cu results. The anomalous samples were all taken from the same stratigraphic shale unit and were spread over 250m of strike exposure along the breakaway.

The copper is present as malachite (green hydrated copper carbonate) and chalcocite (black supergene copper sulphide) in all samples with more than 1% Cu (see Plate 2). Significant tenorite (black high-grade copper oxide) and/or native copper may also be present (as there is insufficient sulphur present to generate the high copper grades as sulphide).

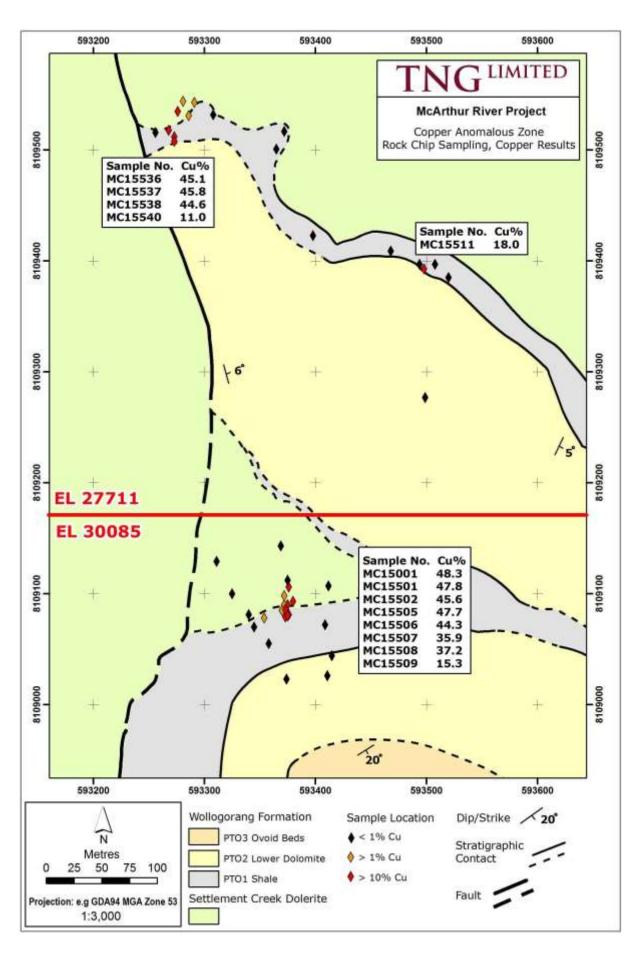


Figure 2. Portion of the mapped area showing the locations of the rock chip samples in Table 1.

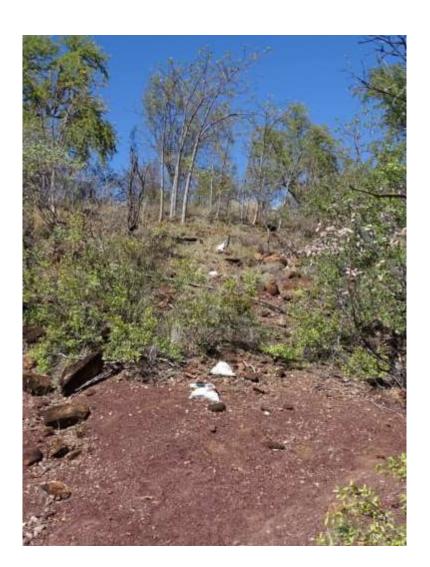


Plate1. Photograph showing the some of the rock chip sampling (MC15535-15538) in the basal shale unit exposed below the dolomite breakaway. Note the poorly exposed outcropping and subcropping shale, the coarse dolomite scree, and the kapok trees growing on the dolomite.



Plate 2. Detailed photograph showing the some of the shale material sampled (MC15541). Note the rubbly nature of the outcrop and the green (malachite) and black (chalcocite) fragments of copper mineralisation.

There is a distinct multi-element association which is displayed by these samples in **Cu-Bi-Ag-Au-Mo**. The multi-

element anomalism for the two areas is outlined in Table 2.

Silver correlates well with copper and is highly anomalous with ten samples returning over 40 g/t Ag and 13 above 10g/t, with a maximum value of 68 g/t. Gold was analysed only in 18 samples and, of those, five results exceeded 0.05 g/t, with a maximum value of 0.10 g/t Au. All anomalous gold results came from samples with >40% copper.

**Bismuth is also highly anomalous, with results to 2220 ppm Bi,** while the background is <20ppm. **Molybdenum (Mo) is elevated in the copper anomalous samples** with a maximum value of 50ppm in sample MC15502 which has 45.6% Cu (Table 1).

TNG has been active in this area since 2011, although most work to date has been directed towards the zinc potential higher in the stratigraphy (see ASX Announcements – 16 September 2013, 20 August 2014, and 14 October 2014). Late in 2014, NTGS-sponsored diamond drilling was completed on two combined geochemical and geophysical zinc targets.

Sampling of this drill core provided numerous sulphides in an organic and sulphide rich portion of the Ovoid Beds subunit of the Wollogorang Formation (Pto3) and returned results of over 0.2% for both zinc and copper (see ASX Announcement – 18 December 2014). The zinc was associated with pyrite and sphalerite fine sulphides in the most organic rich portion of the stratigraphy. Very high (to 7% TOC) organic content is seen in this interval of core.

The extreme high copper grades seen (10-48% Cu) are a result of supergene enrichment in the weathered profile and likely persist to around 100m below surface. The likely original chalcopyrite hypogene copper has been upgraded to supergene sulphide species (chalcocite, bornite, native copper) which were then replaced by carbonate/oxide species (malachite, tenorite) resulting in the extreme grades seen.

These results indicate a new sedimentary hosted stratiform layer of copper mineralisation has been outlined over an area in excess of 600m by 400m. It is several metres thick and persistent under very thin dolomite cover covering an area of at least 0.5 square kilometres. The horizon dips to the east and would be present over a couple of square kilometres at less than 100m depth below surface and reappears to the south of the area mapped. Soil sampling (see ASX Announcement – 16 September 2013) also highlights the copper potential in the south.

It would be unusual if the mineralised zone was not continuous as is normal with sedimentary hosted stratiform layers but further work is required to establish this.

The McArthur River Project is part of a portfolio of non-core base metal assets held by TNG in the Northern Territory which have been included in the demerger of Todd River Resources. This is consistent with TNG's focus on advancing its world-class Mount Peake Vanadium-Titanium-Iron Project to development.

The further evaluation of this prospect will be determined by Todd River Resources once the demerger has been completed, and future work programs would be likely to include trenching and geophysics to determine the full extent of copper anomalism before undertaking drill testing.

TNG's Managing Director, Mr Paul Burton, said the copper results from McArthur River were encouraging and demonstrated the prospectivity of the project.

"This has the early indications of very large and potentially significant copper exploration target," Mr Burton said. "In many respects this vindicates our decision to include this asset with our other significant Northern Territory mineral exploration assets with the demerger into Todd River Resources — which will be able to pursue an appropriate exploration strategy to unlock their full value for shareholders.



"TNG shareholders will continue to have significant exposure to these assets through the proposed in-specie distribution of shares once the demerger has taken place. A timetable for this is anticipated soon and I expect to be able to provide an update on this following our Feasibility Study results from Mount Peake," he said.

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9 June 2015

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#### **About TNG**

TNG is building a world-scale strategic metals business based on its flagship 100%-owned Mount Peake Vanadium-Titanium-Iron Project in the Northern Territory. Located 235km north of Alice Springs, Mount Peake will be a 20-year plus project producing a suite of high-quality, high-purity strategic metals products for global markets including vanadium pentoxide, iron oxide and titanium dioxide. The project, which will be a top-10 global producer, has received Major Project Facilitation status from the NT Government.

The Mount Peake Feasibility Study is well advanced and due for completion by mid-2015, paving the way for project financing and development to proceed. An integral part of TNG's emerging strategic metals business its 100% ownership of the unique and patented TIVAN® hydrometallurgical process, which offers significantly lower capital and operating costs, lowers risk and successfully extracts two other valuable metals from the resource in addition to vanadium – titanium dioxide and high-purity iron oxide.

Vanadium is a highly strategic metal which is used as an alloy in steel. It is also in strong demand for use in energy storage, with vanadium redox batteries used to store electricity generated by solar and wind power, and lithium-vanadium ion batteries used to power hybrid cars.

#### **Competent Person Statement**

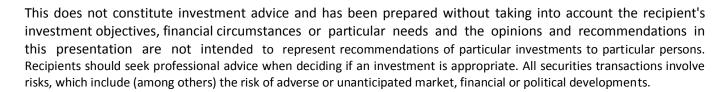
The information in this report that relates to Exploration Results and Exploration Targets is based on, and fairly represents, information and supporting documentation compiled by Exploration Manager Mr Kim Grey B.Sc. and M. Econ. Geol. Mr Grey is a member of the Australian Institute of Geoscientists, and a full time employee of TNG Limited. Mr Grey has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 Grey consents to the inclusion in the report of the matters based on his information in the form and context in which it appear.

#### **Forward-Looking Statements**

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# APPENDIX 1 - Rock Chip Sampling Results

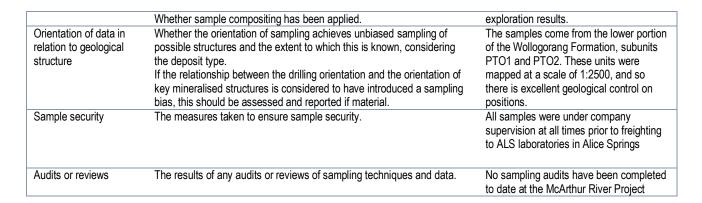
%         ppm         ppm
30         180         40         1.76         <50           30         220         40         0.21         <50           50         200         40         0.92         50           40         670         30         0.27         <50           40         40         0.92         50         <60           30         210         40         0.93         <50           30         210         40         0.93         <50           30         280         50         1.17         <50           30         260         20         0.47         <50           10         410         <0         0.18         <50           10         410         <0         0.18         <50           10         840         <0         0.13         <50           <0         50         <0         <0         <50           <10         50         <0         <0         <50           <10         50         <0         <0         <50           <10         50         <0         <0         <50      <10         50         <0         <0
30   220   40   0.21   50   50   50   50   50   50   50   5
220         40         0.21         <50
220         40         0.52           200         40         0.92           670         30         0.27           450         <20
50         200         40           10         670         30           410         450         <20
10   670   30   10   670   30   10   450   20   30   120   40   30   280   20   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   10   40   4
5510         <10         450           380         30         210           500         30         170           960         30         280           1850         30         260           5230         10         840           5230         10         840           2260         20         360           4080         <10
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
1.48         500         30           1.43         960         30           0.76         1850         30           3.98         5230         10           2.5         2260         20           4.49         4080         <10
0.76         1850         30           3.98         5230         10           3.36         5970         10           2.5         2260         20           4.49         4080         <10
3.98         5230         10           3.36         5970         10           2.5         2260         20           4.49         4080         <10
3.36 5970 2.5 2260 4.49 4080 3.18 3970 5.01 4540 2.03 1480 4.71 4620 3.64 4340 2.64 910
2.5 2260 4.49 4080 3.18 3970 5.01 4540 2.03 1850 4.82 4140 4.71 4620 3.64 4340 2.64 910
3.18 5.01 2.03 4.82 4.71 3.64 2.64
3.44 3.18 1.79 5.01 1.42 2.03 1.84 4.82 2.26 4.71 2.11 3.64 5.95 2.64
1.79 5.01 1.42 2.03 1.84 4.82 2.26 4.71 2.11 3.64 5.95 2.64
1.42 1.84 2.26 2.11 5.95
2.26 2.11 2.95
0.019
-
2540 <20
<50 2540
6.94 <50 2540
<50 2540
N.D. <1 6.94 <50 2540
N.D. <1 6.94 <50 2540
503603 8100654 AD15061360 N D 71 7 00 750 750 750



## **APPENDIX 2 - MCARTHUR RIVER PROJECT**

# JORC TABLE - Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (eg cut channels, random chips, or specific specialised 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.  Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.  Aspects of the determination of mineralisation that are Material to the Public Report.	The samples reported here were collected from outcrop and subcrop of shale and dolomite in the lower Wollogorang Formation. Sampling was selective, with copper colours (green malachite, black chacocite) collected in many samples, and hence are not representative of the full stratigraphy.
Drilling techniques	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).	Not relevant
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.  Measures taken to maximise sample recovery and ensure representative nature of the samples.  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.	Not relevant
Logging	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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.  The total length and percentage of the relevant intersections logged.	The rock samples reported here is geologically described in the report
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.  For all sample types, the nature, quality and appropriateness of the sample preparation technique.  Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.  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.  Whether sample sizes are appropriate to the grain size of the material being sampled.	Rock chip samples from insitu material. Sample preparation by ALS using PUL23 method to crush and pulverize the entire sample – industry standard and appropriate.  No field duplicates taken.  Sample size (>1kg) appropriate for the grainsize of ore minerals.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.  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.  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.	Sample analysed at ALS in Perth by techniques ME-ICP61a - a four acid "total" digest for a suite of 33 elements. Selected samples for Au by Au-AA24 a 50g Fire Assay. High grade copper (>10% Cu) was reanalysed by OG62 (upper DL of 40% Cu) and then as required (if >40% Cu) by ME-XRF15c – a Lithium metaborate fusion decomposition with XRF determination.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.  The use of twinned holes.  Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.  Discuss any adjustment to assay data.	Sampling was conducted by the Exploration Manager No adjustments have been made to the primary assay data
Locations of data points	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.  Specification of the grid system used.  Quality and adequacy of topographic control.	The samples were picked up using a standard GPS device, with accuracy of better than 3 metres for Northing and Easting, and around 5 metres for RL. All coordinates data for the project are in MGA_GDA94 Zone 53.
Data spacing and distribution	Data spacing for reporting of Exploration Results.  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.	Sampling was of an exploratory and reconnaissance nature and spacings are insufficient to establish continuity or define Resources.  No compositing has been applied to the



#### **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The McArthur River Project comprises two tenements EL 27711 and EL 30085, held by Enigma Mining Ltd, a wholly owned subsidiary of TNG Limited.  The samples reported here come from both EL 27711 and EL 30085.  The tenements are in good standing with no know impediments
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The most significant previous work looking for base metals in the area was completed in the late 1960's by AGPL and is available on NTGS open file
Geology	Deposit type, geological setting and style of mineralisation.	The main target for this project is Zn-Pb-Cu-Ag mineralisation of a similar style to that found at the McArthur River Mine, some 60km NNE of the project location. This sample displays strong stratabound copper mineralisation
Drill hole Information	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 relevant
Data aggregation methods	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. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated.	No data aggregation has been applied.
Relationship between mineralisation widths and intercept lengths	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.  If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	The strongly copper anomalous samples are from a known stratigraphic subunit, which has been mapped in detail, but the extent of this mineralisation under cover and down dip is not known
Diagrams	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.	Refer to Figures 1 and 2 in the body of the report
Balanced reporting	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.	All laboratory results are presented.
Other substantive	Other exploration data, if meaningful and material, should be reported	Information relating to this area appeared



Criteria	JORC Code explanation	Commentary
exploration data	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.	in the ASX releases on 16 September 2013, 27 June 2014, 20th August 2014, 14th October 2014, 18 December 2014, and 16 February 2015.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).  Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Further step out geological mapping, rock sampling and soil (pXRF and lab ICP) sampling will be required, and trenching is being considered. Drilling would follow thereafter.