

INAUGURAL DRILLING PROGRAM COMMENCES AT MOUNT HARDY COPPER-ZINC PROJECT, NT

2,000m diamond and RC drill program underway to test high-priority geophysical targets

HIGHLIGHTS

- Maiden drilling program underway at the Mt Hardy copper-zinc project.
- ~2000m of diamond and Reverse Circulation drilling planned.
- Drilling will focus on the highest priority geophysical targets.
- Previous exploration conducted by TNG (ASX: TNG) discovered large areas of surface copper mineralisation, with coincident IP and EM targets and associated mineralisation at depth.
- Following completion of the Mt Hardy program, the rig will move to commence drilling at the Walabanba Project.
- Immediate start of exploration follows Todd River's successful \$6M IPO and ASX listing.

Todd River Resources Limited (ASX: TRT) is pleased to advise that it has commenced its inaugural exploration drilling program at the 100%-owned **Mount Hardy Copper-Zinc Project** located in the Northern Territory.

The combined diamond and Reverse Circulation (RC) drilling programme has been designed to test several strong geophysical targets associated with extensive surface mineralisation outlined by previous exploration work.

The drilling programme at Mount Hardy (Figure 1) will be continue until mid-May before the rig moves on to the Company's Walabanba Project, where further high priority geophysical targets have been scheduled for diamond drilling.

All exploration in the area has previously been reported by TNG (ASX: TNG), and several TNG ASX releases are referenced below. As this is the first report of Exploration Results for this project area as part of Todd River Resources, the exploration work is outlined in Appendices A and B.

The start of drilling at Mount Hardy immediately follows the Company's successful ASX listing yesterday. Todd River Resources recently completed a \$6 million Initial Public Offer following the successful demerger of the Northern Territory base metal assets previously held by TNG.





Figure 1. Location of the Mount Hardy Project in the Northern Territory, with the upcoming drilling areas highlighted in red. Background imagery HELITEM survey and smaller blocks of ground FLEM surveys.



Figure 2. Surface expression of copper mineralisation in old workings – abundant malachite (copper carbonate) in sheared quartz schist at Mount Hardy.



Mount Hardy Project

The Mount Hardy Project comprises numerous old copper and zinc workings that date from the 1930s to the 1970s (Figure 2). TNG originally acquired the Mount Hardy tenure in 2012 and has advanced the project with a combination of geophysical targeting, and systematic prospecting, mapping, and sampling of the old working areas. A total of 23 conductor targets were outlined by a HELITEM program and the strongest ones were followed up with ground fixed-loop EM surveys and limited drilling. Several EM targets and areas of old workings remain to be tested.

Four high priority targets will be drill tested in the current drilling program: the two strongest EM targets (EM Target #1 and #2) and the IP (induced polarisation) geophysical targets at Browns and Mount Hardy (Figure 3).



Figure 3. Mount Hardy Project oblique aerial view looking north, showing the four areas to be drilled. Fixed-loop ground EM images for Areas 1 and 2 (EM Targets #1 and #2) and IP chargeability image for Browns and Mount Hardy.

Mount Hardy Prospect

Drilling will test the down-plunge position of the IP anomaly below the existing drilling and surface workings, (Figure 4).

The Mount Hardy area has the largest surface workings from the historical activity in the Mount Hardy Copper Field. Abundant malachite, azurite, and chrysocolla occur over the workings, which have a strike extent of 300m (Figure 2).

TNG previously outlined a soil anomaly covering an area of 550m by 160m at >200ppm Cu that includes the surface workings and extensions to the north and west (see TNG ASX Release -27 September 2012).

Drill testing below the surface workings returned significant copper intercepts, including: **11.0m @ 0.87% Cu**, **10.3m @ 1.35% Cu**, and **6.0m @ 0.54% Cu** (including **1m @ 9.44g/t Au**) (see TNG ASX Release – 18 April 2013 for full details of drill results). The Mount Hardy copper mineralisation appears to be associated with a broad moderate NNW dipping quartz/sericite shear/alteration zone with abundant disseminated sulphides (chalcopyrite and pyrite) that do not interconnect to generate an EM response, but can be outlined by the IP geophysical technique



(Figure 4). This differs from the responses associated with Cu-Zn-Pb mineralisation at Browns and EM Target #1, which have more abundant sulphides to generate a strong EM response.



Figure 4. Mount Hardy Prospect area IP interpretation showing the planned drill traces. View looking north, with three pseudo-sections showing chargeability highs (warmer colours) coincident with the wire-framed resistivity low (in red).

Browns Prospect

Five holes will be drilled at the IP target at the Browns Prospect to determine the extent of mineralisation surrounding and down-dip from the one hole drilled to date (Figure 5).

The IP target at Browns was outlined in 2013 with strong and coincident chargeability and conductivity zones that strike NW/SE. The mineralisation does not outcrop, but was intersected at 74m down-hole in 13MHDDH015, which intersected **13.0 m @ 1.17% Cu, 1.82% Zn and 0.46% Pb**. (see TNG ASX Release – 13 May 2013 for full details of drill results).

This new "blind" geophysical discovery is currently open in all directions, and extends over an area of 500m by 200m.

These base metal grades are hosted by a quartz breccia and, in places, approach massive sulphide composition. Siliciclastic schists and amphibolite of the prospective Lander Rock Formation Proterozoic rocks host this and the other mineralisation seen over the Mount Hardy Project.







EM Target #1

Drilling will target the strong EM Conductor plate outlined originally from the interpretation of the HELITEM survey, and subsequently refined by drilling and down-hole EM surveys.

Surface mapping has also outlined the mineralised system with copper, zinc and lead oxide/carbonate minerals mapped where the EM plate would crop out.

Hole 13MHDDH010 returned a broad base metal mineralised zone of **21.0m** @ **0.46% Cu**, **4.35% Zn**, **1.91% Pb**, and **36g/t Ag**, with maximum values reported of **1.88% Cu**, **12.05% Zn**, **7.25% Pb**, and **130g/t Ag** (see TNG ASX Release - 20 May 2013).

Interpretation of the combined DHEM data from this and other holes outlined a large and strong (1800 Siemens Conductance) EM plate which measures some 50m by 300m, plunging steeply to the NNW. Three holes have been designed to test this plate, both between the intercepts of holes 13MHDDH010 and 13MHDDH011 and down-plunge of hole 13MHDDH011.



EM Target #2

Drilling will test the EM plate conductor at **EM Target #2** at Mount Hardy. The original HELITEM conductor was tested by three diamond holes (see TNG ASX Release – 20 May 2013) with results shown on Figure 6, and includes **maximum values of 5.9% Cu, 10.5% Zn, 3.4% Pb and 55g/t Ag**.

The steeply NW dipping EM modelled plate will be drilled from a better (more perpendicular) position to achieve both up-dip and down-dip pierce points (Figure 6).



Figure 6. Plan and side view of the interpreted plate at the EM Target #2 at Mount Hardy, with existing drill intercepts and planned pierce points for drill testing.



Following the completion of the Mount Hardy drilling program, the rig will be moved to commence high priority geophysical target drilling on the Walabanba Project (Figure 7). Further information will be provided as the program advances.

Todd River Resources' Technical Director, Paul Burton, said: "We are delighted to have our maiden exploration program underway so quickly after completing our \$6 million IPO and listing on the ASX. The drill pads have been cleared by our team over the last few weeks and all access agreements are in place.

"The commencement of this exciting programme provides Todd River with very real discovery potential in a highly mineralised and prospective part of the Northern Territory, and we expect to be in a great position to generate significant news-flow from this and successive drilling programs in the weeks and months ahead.

"At the same time, we will immediately get to work at our flagship Manbarrum Zinc Project, and we look forward to providing further updates on upcoming activities there in the near future."

Paul E Burton Technical Director

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Figure 7.Plan showing Todd River Resources tenure and projects in the Northern Territory.
The Walabanba and Mount Hardy Project locations are highlighted.



Competent Person Statement

The information in this report that relates to Exploration Results 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 an employee of Todd River Resources 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.

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About Todd River Resources

Todd River Resources (ASX: TRT) is an Australian-based resources company that holds a large, highly prospective zinc and base metals exploration portfolio in the Northern Territory. The Company was formerly a subsidiary of ASX-listed strategic metals company TNG Ltd (ASX: TNG), and was spun-out of TNG in 2016 to advance and develop TNG's significant portfolio of non-core base metals assets.

Todd River Resources recently completed a successful \$6 million IPO at 20c and its shares commenced trading on the ASX on 6 April 2017. With a strong cash position, Todd River is well placed to pursue exploration activities across its exploration portfolio, which are aimed at establishing the Company as a leading force in Australian zinc exploration and development.

Todd River's extensive base metal portfolio includes the large Manbarrum Zinc Project, the Mount Hardy Copper-Zinc Project, the Stokes Yard Zinc Project and the McArthur Copper-Zinc project, as well as a number of other exploration projects covering base metals and other commodities.



Appendix One - Sampling Techniques and Data

Mount Hardy Drilling – Reverse Circulation and Diamond Drilling (Geophysical survey details are outlined in Appendix Two)

Criteria	IORC 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.	Reverse Circulation (RC) drill samples were taken from the rotary splitter mounted on the rig cyclone. Diamond drilling sampled by cutting half core. All samples were submitted to ALS Laboratories for industry standard preparation (whole sample crushed to >85% <75um) and analysis by ME-ICP61.
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).	Combination of Reverse Circulation (xxMHRCxxx holes) and Diamond drilling (xxMHDDHxxx) HQ and NQ size.
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.	For both RC and DDH - average of >90% recovery in all intervals. Diamond core with high recovery provides the best possible and most representative sample medium. No issues of fines loss were observed. No issues relating to preferential loss/gain of grade material have been noted.
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.	RC chips and core was geologically logged for lithology, mineralogy, colour, weathering, alteration, structure and mineralisation. For DDH geotechnical logging included recovery and RQD, while significant structures were logged with alpha and beta angles measured on oriented core or alpha angles on un- oriented core. All core has been photographed both dry and wet. All holes were logged in full
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.	All RC holes were sampled from the rotating splitter under the drill cyclone, taking a 2-4kg split from the bulk 15-25kg 1m interval. All core was sampled by a core saw with half core sampling. The sample preparation for all samples follows industry best practice, with oven drying of samples prior to coarse crushing and pulverization (to >85% passing 75 microns) of the entire sample No field duplicates have been taken. Further sampling (second half, lab umpire assay) will be conducted if it is considered necessary. The sample size (2-5 kg) is considered to be adequate for the material and grainsize being sampled and the style of mineralisation being drilled
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	All samples have been analysed at ALS in Perth by technique ME-ICP61, considered a "total" result. Base metal standards were inserted into the laboratory batch, and returned satisfactory results within acceptable ranges.



	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.	
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 field geologist and verified by the Exploration Manager on site prior to cutting/dispatch. All data was entered into standardized spreadsheets on field laptops and uploaded into the company database. 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.	All drilling collars were located up using a standard GPS unit with accuracy of ca. 5m for Easting, Northing and RL All coordinate data for the Mount Hardy project are in MGA_GDA94 Zone 52.
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. Whether sample compositing has been applied.	At this early stage of exploration hole spacings vary as dictated by target size and position. No compositing has been applied to the exploration results. Sampling was of an exploratory and reconnaissance nature and spacings are insufficient to establish continuity or define Resources.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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.	Drilling intersections at Mount Hardy vary in the relationship to the mineralisation orientation. All holes were designed to give the best possible (as close to perpendicular) intersection, however most drilled prospects only have a few holes and so the orientation is not well defined. In practise the intersections are at worst oriented at 45 degrees to the plane of the mineralisation (when it is known).
Sample security	The measures taken to ensure sample security.	All core and samples were under company supervision at all times prior to delivering to ALS laboratories in Alice Springs
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No sampling audits have been conducted at Mount Hardy

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary		
Mineral tenement and land	Type, reference name/number, location and ownership	The Mount Hardy prospects are located on		
tenure status	including agreements or material issues with third parties	tenements EL 27892, EL 28694 and EL		
	such as joint ventures, partnerships, overriding royalties,	29219 held by Todd River Metals Pty Ltd,		
	native title interests, historical sites, wilderness or	which is wholly-owned by Todd River		
	national park and environmental settings.	Resources Limited. Todd River Resources Ltd		
	The security of the tenure held at the time of reporting	has recently been spun out from TNG Ltd,		
	along with any known impediments to obtaining a licence	which held the ground prior to the float.		
	to operate in the area.	All tenements are in good standing with no		
		know impediments		
Exploration done by other	Acknowledgment and appraisal of exploration by other	All significant work was conducted by TNG		
parties	parties.	Limited, and has been reported to the ASX in		
		several ASX Releases (Mentioned in the text).		
Geology	Deposit type, geological setting and style of	Exploration at Mount Hardy conducted by TNG		
	mineralisation.	Ltd over the last few years has aimed to identify		
		structurally controlled base metal mineralisation,		
		similar to that already outlined at Mount Hardy		
		and elsewhere in the Arunta at Jervois or Barrow		



		Creek. Both areas are underlain by the Paleoproterozoic Lander Rock Beds schists and gneisses and have been intruded by Mesoproterozoic granites and are cut be major shear zones.
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: Easting and northing of the drill collar Elevation of RL (Reduced Level – elevation above sea level in metres) of the drill collar Dip and azimuth of the hole Down hole length and interception depth Hole length	No new drill information reported here. See referenced TNG ASX releases for drilling details.
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.	Length weighting used for summary intervals. No maximum or minimum cuts 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').	Not applicable. No new drill results being reported.
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 through 5 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.	Not applicable
Other substantive exploration data	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.	No substantial new data is available, beyond the geophysical survey data and interpretation reported here and outlined in Appendix One and Two.
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.	Planned drilling work is outlined in the report.



Appendix Two

Geophysical Survey Details

Mount Hardy – Down Hole EM and IP Survey Specifications

DHEM Surveys for Holes 13MHDDH010, 011, 014 and 015

- Instrumentation Crone Tx/Rx and borehole probe
- Transmitter Loop Size 300x300m, single turn (20Amps)
- Base Frequency / Time Base 5Hz / 50msec
- All coordinates expressed in GDA94 / MGA zone 52

IP Surveys over the Browns Prospect and EM Targets #6 and #7 at Mount Hardy

<u>IP Survey Specifications (for each area):</u>

- Offset Dipole-Dipole Array
- Central Tx line + 2 Rx lines offset by 100m
- 50m Rx dipole spacing
- 50m Tx station spacing
- 16-channels per Rx line (800m)
- GDD 2400V / 10A Tx
- GDD Receiver
- All coordinates expressed in GDA94 / MGA zone 52

Prospect	Array No.	Array Type	Tx Line (E)	Tx Range (N)	Tx Line Length	No. of Tx Stations	Rx Lines (E)	Rx Range (N)	Rx Array Length
Browns	1	Double-Offset Dipole-Dipole	760400	7554500- 7555300	800m	17	760300 760500	7554500- 7555300	800m
Target T6	2	Double-Offset Dipole-Dipole	763100	7555800- 7557000	1200m	21	763000 763200	7556000- 7556800	800m
Target T7	3	Double-Offset Dipole-Dipole	761800	7549500- 7550700	1200m	21	761700 761900	7549700- 7550500	800m