

## ASX Announcement

ASX Code: RVR

16 June 2015

# Feeder Zones Identified in First Drillhole at Wattle Tree Prospect

---

### Highlights

- Sulphide mineralisation intersected in first hole (TH665) at the previously untested Wattle Tree prospect
  - Mineralisation consists of disseminated and stringer zinc-lead-copper sulphides typical of the feeder zones beneath the Thalanga & West 45 deposits
  - Feeder zones confirm the existence of a mineralised centre at Wattle Tree
  - TH665 also identified a series of blind Quartz Eye Volcaniclastic rock units (QEV) – the same rock unit that hosts the known massive sulphide mineralisation at Thalanga and West 45
- 

Zinc developer Red River Resources Limited (Red River or the Company) is pleased to announce that its first exploration drill hole (TH665) at the Wattle Tree prospect has intersected disseminated and stringer, zinc-lead-copper sulphide mineralisation.

The Wattle Tree prospect is part of Red River's Thalanga Zinc Project, located approximately 65kms west of Charters Towers in North Queensland. The mineralisation identified at Wattle Tree is typical of the feeder zones present beneath the Thalanga and West 45 massive sulphide lenses.

TH665 has confirmed the presence of:

- Mineralised feeder zones similar in nature to feeder zones intersected in historic drill holes beneath the known massive sulphide mineralisation at the Thalanga & West 45 deposits; and
- TH665 has also intersected multiple Quartz Eye Volcaniclastic (QEV) units. QEV forms the host rock to the massive sulphide mineralisation at Thalanga and West 45, with the more permeable nature of the QEV allowing the mineralising fluids of the feeder zone to penetrate and replace the QEV, depositing massive sulphide mineralisation.

Managing Director of Red River, Donald Garner said: "We are very excited by this result as TH665 has confirmed the presence of the two key ingredients for massive sulphide mineralisation in the Thalanga project area - the mineralised feeder zone and the QEV host rock.

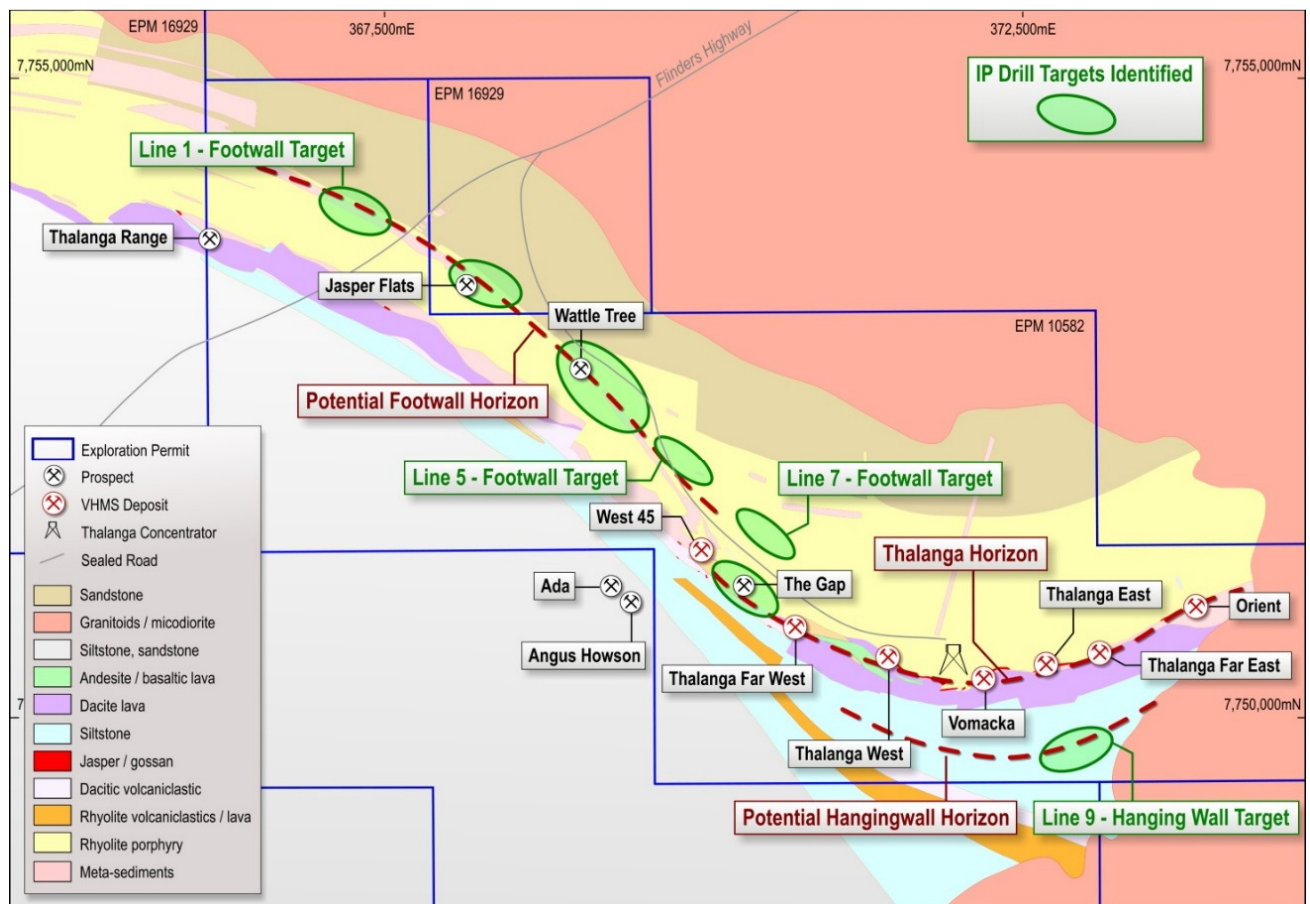
TH665 has hit the plumbing (feeder zone) which is similar in style and nature to the feeder zones associated with Thalanga and West 45. The presence of mineralised feeder zones is potentially indicative of a substantial mineralising event, and we have also hit a number of previously unknown QEV units which host the massive sulphide mineralisation at Thalanga and West 45.

To have identified a previously unknown mineralised system with the second drill hole of Red River's maiden exploration drilling program at Thalanga is a great result and validates our systematic approach to exploration."

The Thalanga exploration program is part of the Company's overall exploration strategy with the objective of identifying additional resources to extend the mine life of the Thalanga Zinc Project.

The Company is working towards restarting zinc production at Thalanga by end of 2015.

Figure 1 Thalanga Prospects & Priority Targets



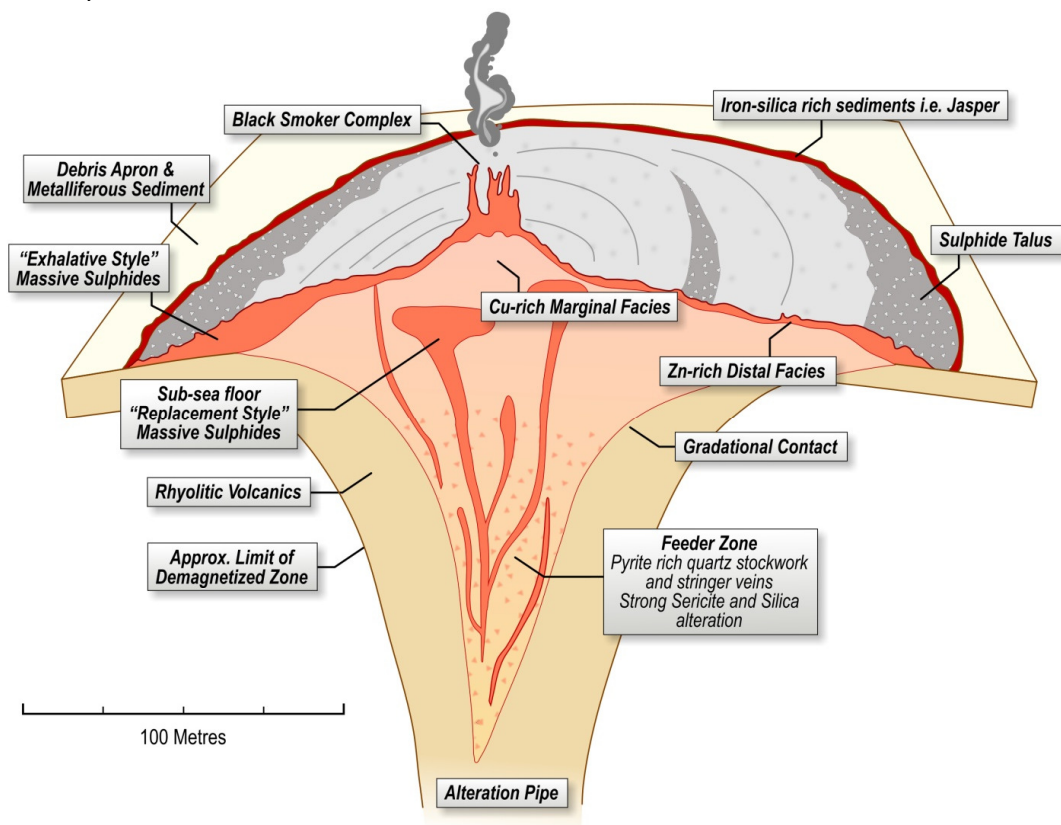
## 1. Wattle Tree Target

Drillhole TH665 was collared at the Wattle Tree Target and was completed on 14 June at 456m depth. TH665 intersected multiple de-magnetised, strongly chlorite and sericite-silica altered rhyolitic lithologies with abundant disseminated and veined sulphide mineralisation from approximately 100m downhole. Four mineralised zones were intersected in total (Figure 4). The alteration assemblages and sulphide levels of Zones 1, 2 & 3 are indicative of feeder zones within the rhyolite. Whilst Zone 4 represents a concentration of zinc mineralisation within the QEV, the same process responsible for the massive sulphide mineralisation at the Thalanga and West 45 deposits.

Feeder zones represent a typically conical zone, stratigraphically beneath massive sulphide deposits in which high temperature metal rich fluids were focussed, feeding the overlying massive sulphide mineralisation. The high temperature environment within a feeder zone typically produces pyrite dominant sulphides with lesser copper mineralisation. Migration of the fluids through the host rocks typically produces silicification and sericite and or chlorite alteration with the sericite alteration also responsible for de-magnetisation of the host rock. Identification of a feeder zones at Wattle Tree indicates the presence of a previously unknown mineralised hydrothermal centre capable of developing zinc rich economic massive sulphides.

Figure 2 Volcanic Hosted Massive Sulphide Deposit Schematic

*Adapted from Galley et al, 1996*



### Historic Drilling

Only one historic hole (THP091) has been drilled in the Wattle Tree Area. THP091 was drilled by PanContinental Mining in 1995 to 84m depth and failed to test the geophysical/geochemical anomalies current being drill tested.

Figure 3 Wattle Tree Drill Plan

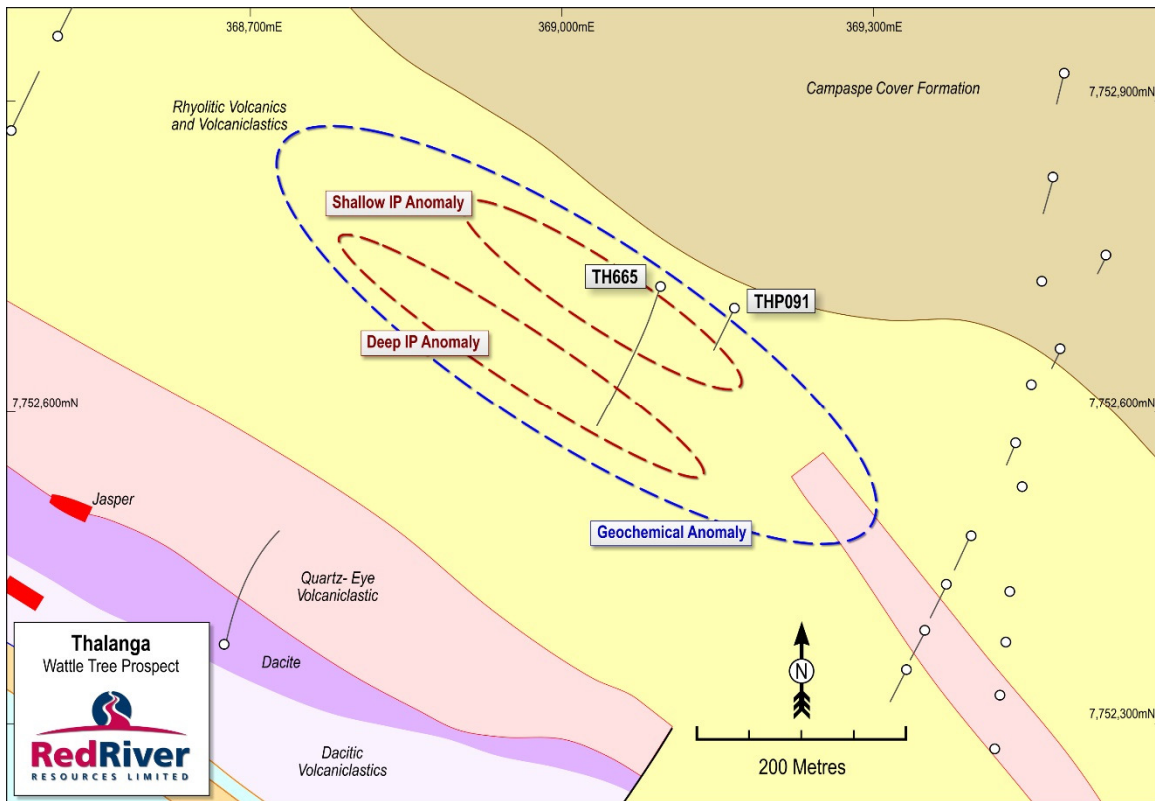


Figure 4 Wattle Tree Target Cross Section

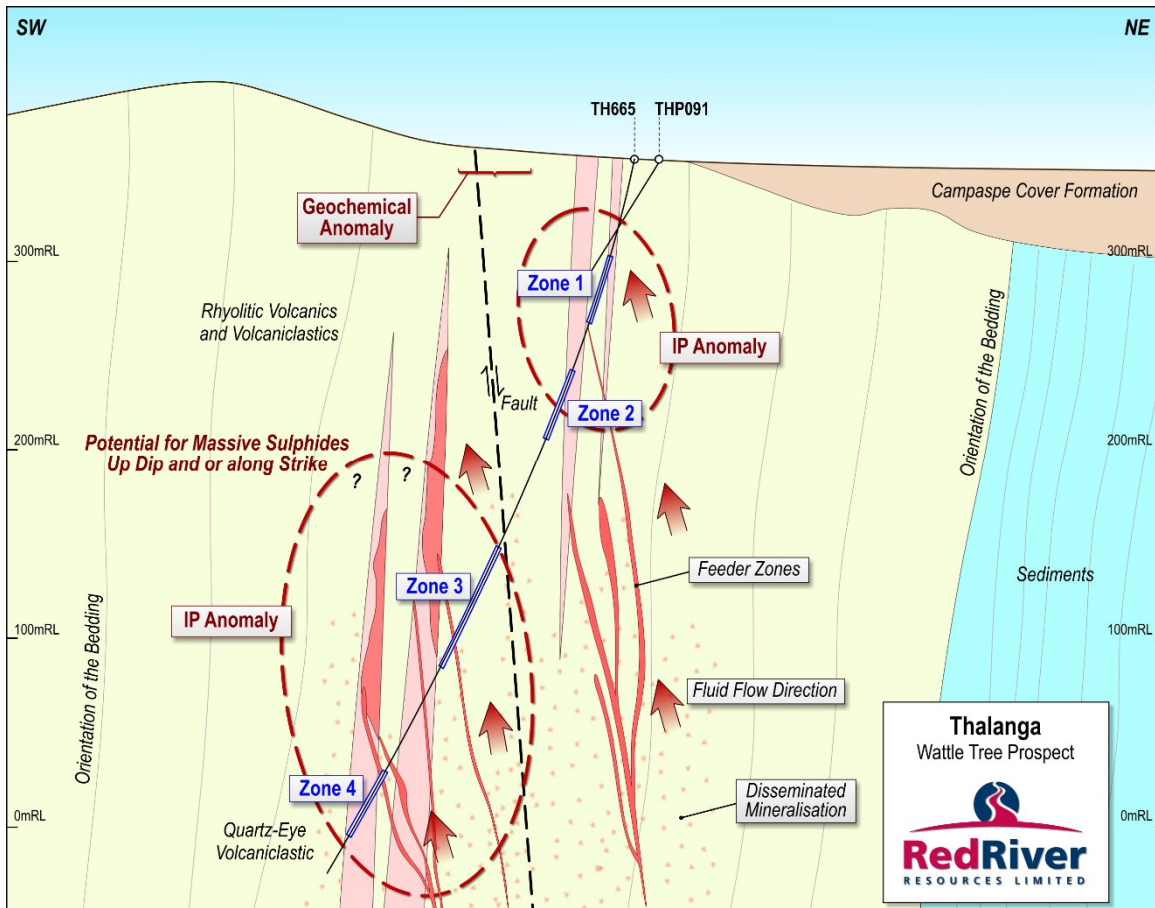




Figure 5 TH665 Zone 1 (113m downhole): Strongly chlorite-sericite altered rhyolite with abundant pyrite-chlorite stringers

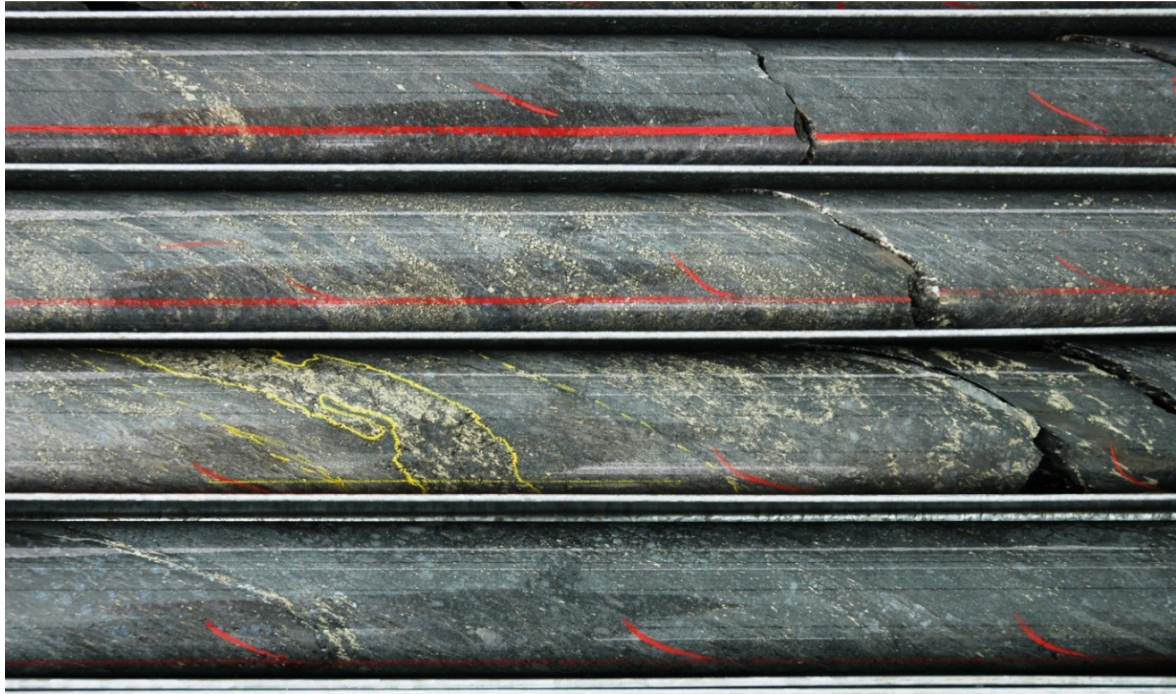


Figure 6 TH665 Zone 1 (159m downhole): Strongly chlorite-sericite altered rhyolite with abundant pyrite-chlorite clots and coarse quartz-pyrite veining

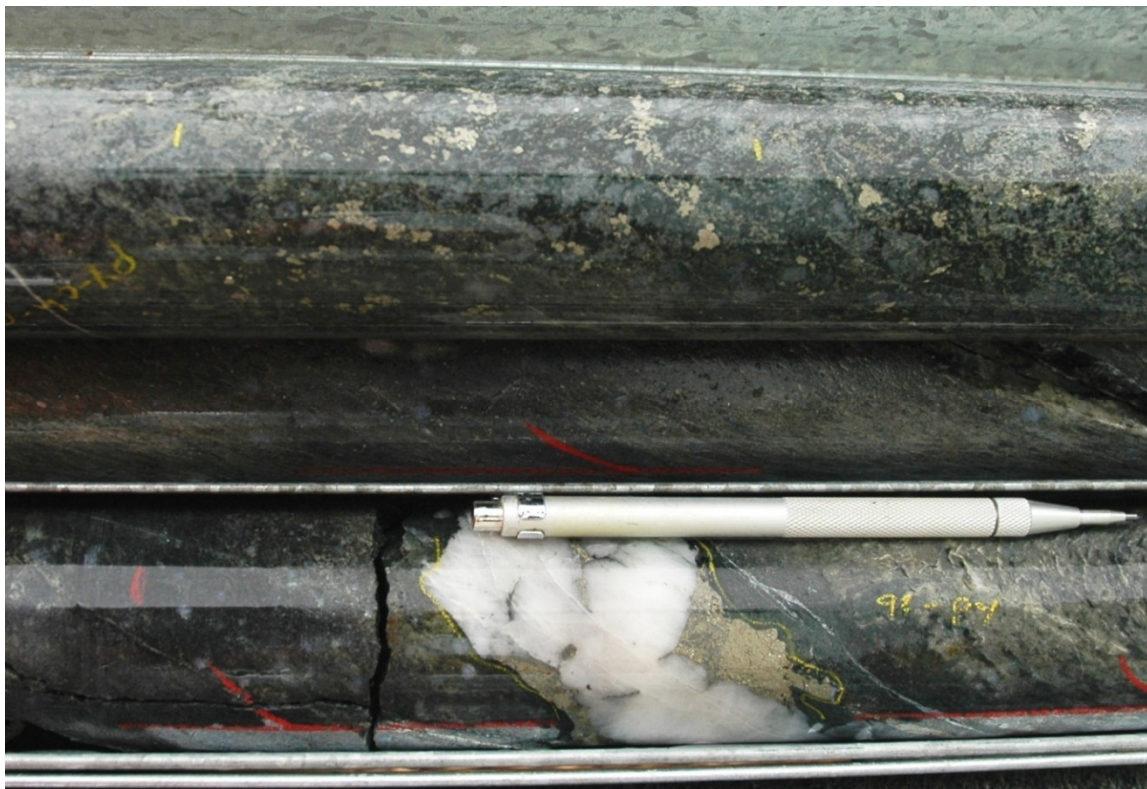




Figure 7 TH665 Zone 2 (275m downhole): Strongly silica-sericite altered rhyolite with quartz-sphalerite (light brown)-galena (dark grey) veining



Figure 8 TH665 Zone 2 (283m downhole): Strongly silica-sericite altered rhyolite with quartz-chalcopyrite (bright yellow) - galena (dark grey) veining





Figure 9 TH665 Zone 2 (311m downhole): Strongly silica-sericite altered rhyolite with sphalerite veining (dark brown)



Figure 10 TH665 Zone 3 (412m downhole): Strongly siliceous rhyolite with sphalerite-galena-pyrite veining





Figure 11 TH665 Zone 4 (421m downhole): Strongly sericite altered Quartz Eye Volcaniclastic (QEV) with abundant disseminated sphalerite -pyrite and veining.

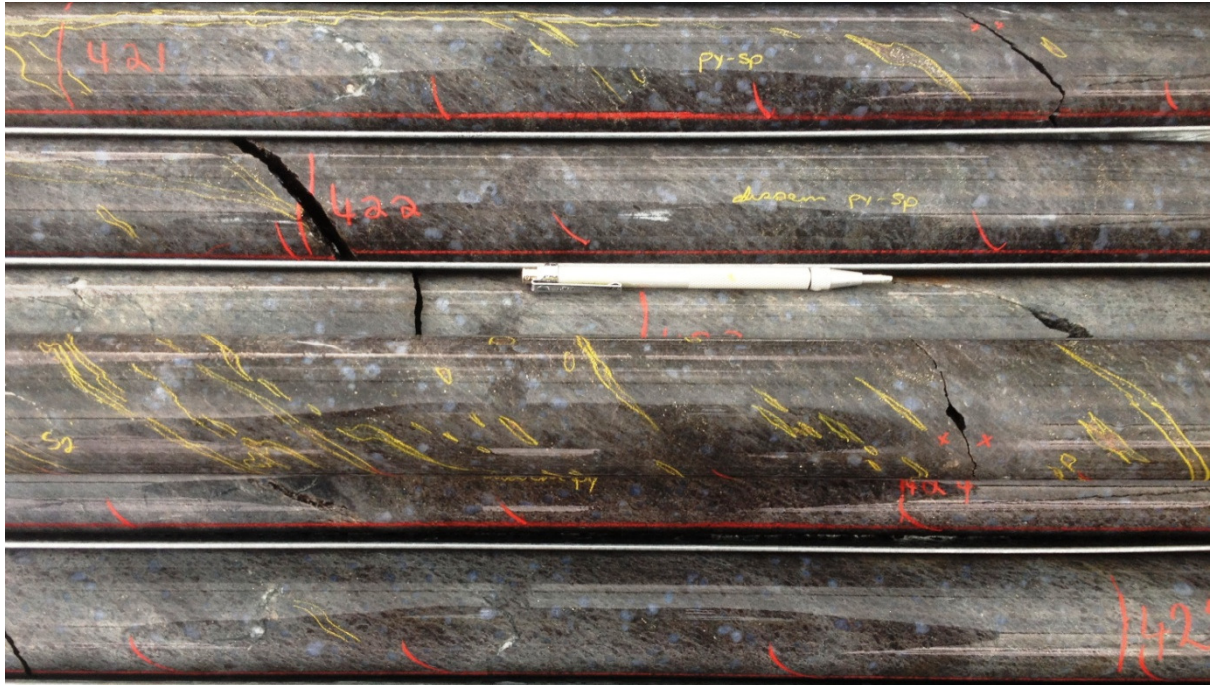


Figure 12 TH665 Zone 4 (435m downhole): Strongly sericite altered Quartz Eye Volcaniclastic (QEV) with chalcopryite-galena-pyrrhotite veining.





## **2. Proposed Drilling and Next Steps**

Further drilling will be conducted at the Wattle Tree prospect to test the hydrothermal system both up and along strike. Geophysical techniques including down-hole EM may also be employed.

## **3. Thalanga East Hanging Wall Target**

The Thalanga East Hanging Wall target was identified by the Company's recent Induced Polarisation (IP) survey which identified a large zone of strong chargeability with a central core of moderate conductivity under 10-20m of cover. The location of the IP anomaly is coincident with a historical surface geochemical anomaly. Drillhole TH664, collared at the Thalanga East Hanging Wall target intersected a large doleritic intrusive body with disseminated copper sulphide mineralisation, explaining both the IP anomaly and the coincident geochemical anomaly. As such, no further drilling at Thalanga East Hanging Wall Target is warranted.

## **4. Update on Restart Study**

The Restart Study is progressing well and is due for completion in the coming weeks. Leading mining consultant Mining One is nearing completion of its work on resource modelling and mine scheduling. Preparations are underway for the restart, including dewatering of West 45 (40% complete) and the refurbishment of the Thalanga Mill. Negotiations with potential concentrate off-takers and discussions with mining contractors are underway. The Company is also reviewing a number of options to fund the restart of the plant as well as the ongoing resource definition and exploration drilling programs, which are central to the strategy of extending the mine life of the Thalanga plant. Further updates will be provided to the market in due course.

On behalf of the Board



**Donald Garner**

**Managing Director**

Red River Resources Limited

**End.**

---

For further information please visit Red River's website [www.redriverresources.com.au](http://www.redriverresources.com.au) or contact us:

Donald Garner  
Managing Director  
[dgarner@redriverresources.com.au](mailto:dgarner@redriverresources.com.au)  
M: +61 438 338 496

Paul Hart  
Non-Executive Director  
[phart@redriverresources.com.au](mailto:phart@redriverresources.com.au)  
M: +61 421 051 474

Nathan Ryan  
NWR Communications  
[nathan.ryan@nwrcommunications.com.au](mailto:nathan.ryan@nwrcommunications.com.au)  
M: +61 420 582 887



ACN 100 796 754

## **COMPETENT PERSON STATEMENT**

### Exploration Targets and Exploration Results

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Tav Bates who is a member of the Australasian Institute of Mining and Metallurgy, and a full time employee of Terra Search Pty. Ltd., and who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken 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' (JORC Code). Mr Bates consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.



## JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>This report relates to visible sulphide base metal mineralisation within diamond drill core.</li> <li>No quantitative analysis of the drill core had been conducted at the time of writing</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling techniques consist of;</li> <li>PCD drilling through the poorly consolidated cover sequence</li> <li>HQ diamond core drilling for the first 100-150m of each hole</li> <li>NQ2 diamond core drilling for the remainder of the drill holes.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Sample recovery is measured and recorded by company trained geotechnicians</li> <li>Good ground conditions have been encountered to date resulting in negligible sample loss</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Holes are logged to a level of detail that would support mineral resource estimation.</li> <li>Qualitative logging includes lithology, alteration and textures</li> <li>Quantitative logging includes sulphide and gangue mineral percentages</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field</li> </ul>	<ul style="list-style-type: none"> <li>This report relates to visible sulphide mineralisation within the drill core.</li> <li>Sampling and analysis of the drill core had not occurred at the time of writing</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>duplicate/second-half sampling.</p> <ul style="list-style-type: none"> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>This report relates to visible sulphide mineralisation within the drill core.</li> <li>Sampling and analysis of the drill core had not occurred at the time of writing</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>This report relates to visible sulphide mineralisation within the drill core.</li> <li>Sampling and analysis of the drill core had not occurred at the time of writing</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Collars surveyed with handheld GPS</li> <li>Down hole surveys conducted with Camteq multi-shot digital camera</li> <li>Coordinate system used is MGA94 Zone 55</li> <li>Topographic control is based on a detailed 3D Digital Elevation Model</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling and analysis of drill core had not occurred at the time of writing, hence data spacing information is irrelevant to this report</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Drill holes are orientated perpendicular to the perceived strike of the host lithologies</li> <li>Drill holes are drilled at a dip based on logistics and dip of anomaly to be tested</li> <li>The orientation of the drilling is designed to not bias sampling</li> <li>The orientation of the drill core is determined using a Camteq digital Orientation Tool</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling and analysis of drill core had not occurred at the time of writing, hence data security information is irrelevant to this report</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling and analysis of drill core had not occurred at the time of writing, hence audit information is irrelevant to this report</li> </ul>



## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The drilling was conducted on EPM 10582.</li> <li>EPM 10582 forms part of Red Rivers 100% owned Thalanga Zinc Project</li> <li>Red River engaged Native Title Claimants, the Gudjalla People to conduct cultural clearances of drill pads and access tracks</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Historic Exploration was carried out by PanContinental mining &amp; RGC Exploration. This included drilling and geophysics</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The exploration model is Volcanic Hosted Massive Sulphide (VHMS) base metal mineralisation</li> <li>The regional geological setting is the Mt Windsor Volcanic Sub-province, consisting of Cambro-Ordovician marine volcanic and volcano-sedimentary sequences</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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, including, easting and northing, elevation or RL, dip and azimuth, down hole length, interception depth and hole length.</li> <li>If the exclusion of this information is justified the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>See Appendix 1 – Drill Hole Details</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling and analysis of drill core had not occurred at the time of writing, hence data aggregation information is irrelevant to this report</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul style="list-style-type: none"> <li>Sampling and analysis of drill core had not occurred at the time of writing, hence mineralisation widths and intercept length information is irrelevant to this report</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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 plans and sections.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to plans and sections within report</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All holes drilled are reported</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>All meaningful and material data is reported</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	<ul style="list-style-type: none"> <li>Further drilling to be conducted up dip and along strike to test for massive sulphide mineralisation</li> </ul>

## Appendix 1 – Drill Hole Details

Hole ID	Prospect	Easting	Northing	Dip	Azimuth	Final Depth
TH664	Thalanga East Hanging Wall	372904	7749439	-60°	340.8°	400.9m
TH665	Wattle Tree	369095	7752723	-75°	201.8°	456.0m