

TNG Discovers Long-Term Water Supply Source for Mount Peake Vanadium Mine Development

Discovery of large aquifer system significantly de-risks project ahead of Feasibility Study completion

HIGHLIGHTS

- Recent successful water bore drilling program has successfully outlined an aquifer with likely sufficient sustainable volume and quality of water to support the Mount Peake mining and processing operation.
- Aquifer assessment work is ongoing with borefield design, permitting and costing work to follow.
- All of this work will contribute towards the Mount Peake Definitive Feasibility Study to be delivered by the middle of 2015.

Australian strategic metals company TNG Limited (ASX: TNG) is pleased to advise that it has significantly de-risked a critical aspect its **Mount Peake Vanadium-Titanium-Iron Project** in the Northern Territory with the discovery of a large aquifer system capable of providing a sustainable long-term water source for the project.

The recently completed water drilling program (*see ASX Announcement – 23 March 2015*) was designed to prove the availability of water for use on the proposed Mount Peake mine site for process plant water, site dust suppression and camp potable water supply, as required for the Feasibility Study.

The drilling program was highly successful, outlining a large aquifer system within the Hansen Palaeochannel, which lies beneath the Hansen River, located around **20km** from the Mount Peake deposit (Figure 1). Preliminary indications from pump test-work are that it is capable of providing a **sustainable long-term source of water to supply all of the requirements of the Mount Peake mining and processing operation over the planned 20-plus year life of the project.**

A total of five holes for 336m were drilled in late March along the lower reaches of the Hansen River. Details of the drilling program are outlined in Appendix 1 with hole locations outlined in Table 1 and shown on Figure 1. The drilling was conducted by a licensed water bore drilling company/driller from Alice Springs using a percussion air system (shown in Figure 2).

Four 205mm exploration bores were cased with 150mm slotted PVC, and the final test production bore hole was drilled to 300m and cased with 200mm slotted steel pipe. All holes were finished with cemented steel head-works and had Summary Logs registered with the NT Water Resources Department.

All five bores **intersected a consistent alluvial aquifer** which varied from 20m to 36m in thickness of clean and unconsolidated coarse river sands and gravels. The aquifer zone commenced at a depth of around 12m below surface and the deepest portion was less than 60m below ground.

Drilling was managed by TNG staff with water test-work supervised by hydrogeological staff employed by the Company's consultants, GHD. GHD is a global services company (operating in the water, energy and resources sectors) that has been appointed by TNG to complete the Environmental Impact Statement (EIS) for the Mount Peake development (*see ASX Announcement – 17 February 2015*).

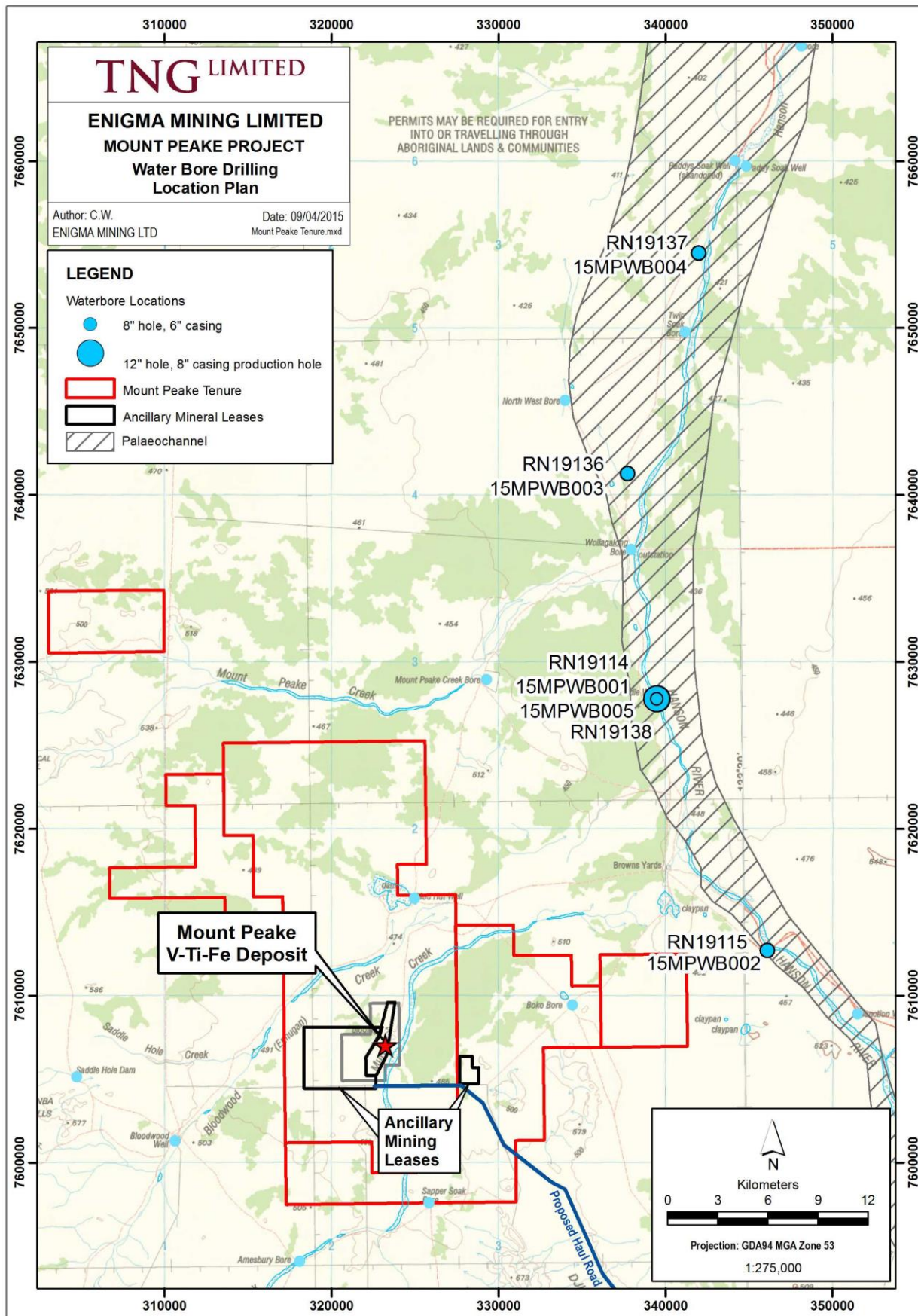


Figure 1. Location of water bores along the Hansen River, TNG tenure, and the position of the Mineral Resource.

Pump testing (Figure 3) of the exploration and test production bores was conducted by the drilling contractor under the supervision of GHD hydrogeological staff. Preliminary indications are that **sufficient volumes and quality water will be available in this aquifer system, and that it will be able to be sustainably extracted to supply all of the requirements of the mining operation.**

The main water requirement is for the process plant, in the grinding circuit and then the magnetic separation plant, with some 0.4GLpa (Gigalitres per annum) required. Part of this will be reclaimed from the tailings (testwork is ongoing on tailings stream options) and can also be utilised for the second most significant use – dust suppression.

Potable water for camp and human consumption is a relatively minor component of the overall water requirement, and will be obtained from treatment (through a reverse osmosis plant) of the borefield supply. Overall, the total requirement is somewhat below 1GLpa, but indications, from pump testwork field data, is that the Hansen paleochannel will be able to comfortably provide this amount.

Water quality varied between the five holes, but holes 15MPWB001 and 15MPWB005 both returned values of less than 5000ppm TDS (Total Dissolved Solids, a measure of salinity) from all field sampling of the main aquifer. The borefield will therefore be established in this area.

A detailed assessment of the aquifer's characteristics is now being conducted. This includes sample analysis from all recent drilling as well as all of the existing station bores in the area. The aquifer system will be incorporated into the overall Mount Peake surface and groundwater model being developed by GHD.

Following the aquifer assessment, GHD will undertake design and costing work for the development of the borefield. This will include all necessary permitting required through the Mines and Water Resources Departments. These results will form a component of the overall Feasibility Study which is due to be completed by the middle of 2015.



Figure 2 (Above). Water bore drilling on the Hansen paleochannel (15MPWB002).



Figure 3 (Right). Pump testing on the production bore 15MPWB005, using a submersible variable pump and digital flow metering.

TNG's Managing Director, Mr Paul Burton said the discovery of a long-term water source was a highly significant and very positive development for the Mount Peake Project.

"In an arid region such as this, identifying and securing a long-term sustainable water source is a key requirement for any mining and processing operation," Mr Burton said. "While we were always confident that we would be able to identify a suitable water source in the region, we were until now unsure of exactly where it would come from."

"This discovery has therefore significantly de-risked the project and ticks a very important box as part of the overall Feasibility Study. Subject to obtaining the required regulatory approvals and agreements to access this aquifer, this water supply solution will be incorporated into the final Feasibility Study report, which is due for completion by mid-year."

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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.

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 is 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.

Forward-Looking Statements

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Table 1. Water Bore collar summary details.

HOLE_ID	HOLE_TYPE	EASTING_GDA94	NORTHING_GDA94	RL	DEPTH	DIP	AZIM_MAG
15MPWB001	8" Percussion	339560	7627833	436	78.0	-90	360
15MPWB002	8" Percussion	346150	7612700	460	66.0	-90	360
15MPWB003	8" Percussion	338710	7641403	443	78.0	-90	360
15MPWB004	8" Percussion	341615	7657621	418	48.0	-90	360
15MPWB005	12" Percussion	339557	7627846	436	66.0	-90	360

APPENDIX ONE – MOUNT PEAKE WATER BORE DRILLING

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.	Samples from water bores include water collected from pump testing and percussion rock samples of the cuttings. Cuttings were placed in 3m piles by the contractor and sampled for laboratory submission similarly. All piles were collected into chip trays and also analysed on site by portable XRF.
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).	Open hole percussion (hammer) rig using air (350psi and 1070cfm) lift.
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.	Good recoveries were obtained in all intervals drilled, however some contamination (of the loose sandy material in the aquifer zone entrained into samples lower down in the hole) was noted from the lower half of all holes. This is inherent in the drilling technique used – which was selected as the best way to assess the water/aquifer properties.
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.	Chips, from 3m piles, were geologically logged in full. Sufficient details were obtained to enable picking aquifer and basement lithologies.
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 sampling was by spear from sample piles on the ground. A 2-3kg sample was obtained from each 3m pile for lab submission. The sample preparation for 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. The sample size (2-5 kg) is considered to be adequate for the material and grain size 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 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 (or lack of bias)	Not available as yet. Samples are to be analysed for the multi-element suite at ALS in Perth by technique ICP (ME-ICP61a).

	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 TNG staff and verified by the Exploration Manager on site. Primary geological logging was entered into standardized spreadsheets on field laptops and uploaded into the company database.
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.	Drill holes were picked up using a standard GPS device using multiple point averaging, 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. Whether sample compositing has been applied.	Water bore spacing were dictated by the aquifer and are spaced at several kilometres along a paleochannel that extends for over 50 kilometres. 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.	All water bores were drilled vertically to intersect the aquifer, which is flatlying
Sample security	The measures taken to ensure sample security.	All core and samples were under company supervision at all times prior to freighting 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 completed to date on the water bore drilling completed at Mount Peake

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 Mount Peake Project comprises eleven tenements, including ELs and MLs held by Enigma Mining Limited, a wholly owned subsidiary of TNG Limited. The tenements are in good standing with no known impediments Drilling was conducted along the Hansen paleochannel with relevant Water Resources and Heritage clearances
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Only pastoralist wells exist along the area drill tested
Geology	Deposit type, geological setting and style of mineralisation.	The target is a Tertiary alluvial paleochannel aquifer zone, which links to the Ti Tree aquifer to the south
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: <ul style="list-style-type: none"> ○ 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 	See Table 2

	o Hole length	
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').	Each hole is near perpendicular to the aquifer zone being tested and so drill intercepts are near to true widths.
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 Figure 3 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.	No laboratory results (geochemical or water quality) are available to date.
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.	There has been no prior work on the paleochannel aquifer system along the lower Hansen River
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.	Analytical results are awaited and will be reported in due course. Full assessment of the aquifer will follow with GHD working towards obtaining necessary permitting and design and costing of the borefield's development in time for the Mount Peake mine development