

31 May 2016

## **Tumas Project *U-pgrade*<sup>TM</sup> Metallurgical Testwork: Further Update to Interim Results**

### **KEY POINTS**

- **The initial results show that application of Marenica's *U-pgrade*<sup>TM</sup> process to the Tumas bulk samples can effectively reject up to 98% of the mass and retain greater than 82% of the uranium.**
- **Indications are that a high grade concentrate in excess of 13,000 ppm U<sub>3</sub>O<sub>8</sub> can be produced by application of the process to the 368 ppm U<sub>3</sub>O<sub>8</sub> Tumas ore.**
- **Because of the significant mass reduction, a project incorporating the beneficiation process as an integral part of the overall flowsheet has the potential to have comparatively low capital and operating costs and an accelerated development timeline.**

Advanced stage uranium explorer **Deep Yellow Limited (ASX: DYL)** is pleased to provide a further update to its recently announced interim results from the metallurgical testwork program currently underway on bulk samples from the Company's Tumas Project located in Namibia. (Refer ASX release 20 May 2016)

The tests are being conducted at the CSIRO and Nagrom Laboratories in Perth under the supervision of Marenica Energy Ltd (Marenica) and DYL's consulting metallurgist Mr Martin Errington.

DYL advised recently that the interim results were promising because they provided confidence that a high recovery of uranium can be achieved into a low mass, high grade concentrate. An explanation of the process follows to better illustrate the reasoning by DYL's technical team.

### **Metallurgical Testwork**

The Company has been working with Marenica since late 2013 when the first tests were reported to shareholders (December Quarter Activities Report - 2 February 2014). Subsequently, a small infill drilling program and sophisticated geophysical modelling completed in 2015 provided confidence that the Tumas – Tubas Palaeochannel was sufficiently prospective to warrant further work.

Following this field work and after further engagement with Marenica, bulk samples were excavated from the Tumas Zone 1 resource area infill drilling area in December 2015 and January 2016.

The proposed metallurgical *U-pgrade*<sup>TM</sup> flowsheet, developed by Marenica, has a patent pending and DYL has executed a Confidentiality Agreement.



The process in its simplest form involves the physical beneficiation of the sample through two key stages before moving to concentrate the remaining uranium minerals.

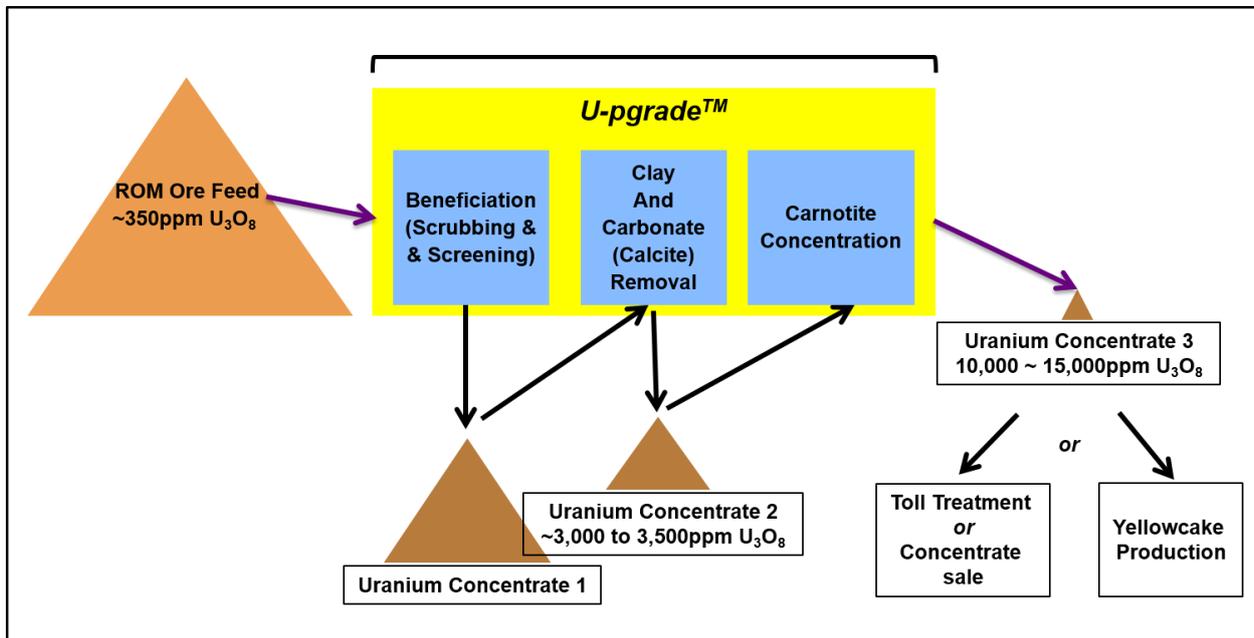


Figure 1: Marenica *U-pgrade™* Flowsheet - Schematic Representation.

As previously advised, mineralogical characterisation has shown that the primary uranium bearing mineral, carnotite, is liberated in the process. This conclusion can be drawn because of extensive mineralogical analysis completed by CSIRO on the feed sample and interim testwork products.

Calcrete ores such as Tumas are characterised by carbonate minerals and fine particulate material. The presence of carbonate minerals excludes the use of acid leaching due to the high acid consumption and thus the conventional approach is to leach these ore types with alkali, a high temperature, slow kinetics and relatively high cost process. The inclusion of fine particulate material in the ores produces materials handling issues, which result in higher operating costs and reduced uranium recovery.

Removal of carbonate minerals produces a concentrate with minimal acid consumers, a suitable feed for the faster kinetics, lower operating and capital cost acid leach process. Removal of the fine particulate material greatly improves the materials handling characteristics, which is a significant advantage for a beneficiation process and subsequent leach and solid/liquid separation stages.

The interim results determined that >95% of the carbonate minerals could be removed with a loss of <5% of the uranium. The de-slimes step rejected ~27% of the mass as fine particulate material with <7% of the uranium feeding the de-slime stage. These interim results have demonstrated that the critical carbonate and de-slime removal steps of the process do work on the Tumas samples provided, which is very encouraging. Application of the process will enable a significant reduction in the mass being handled with a minor loss of the primary mineral.

Testwork is continuing on further upgrading of the uranium into a low mass concentrate. Results to date indicate that a concentrate containing less than 3% of the ore feed mass, grading greater than 13,000 ppm  $U_3O_8$  and containing greater than 82% of the uranium can be generated from the Tumas samples. through application of Marenica's *U-pgrade™* process.



The final concentrate will be suitable for processing using conventional acid leaching and refining technology to produce yellowcake. Alternatively the concentrate produced may be safely and cost-effectively transported to third parties for final processing.

The Company has consistently sought opportunities to become a producer via a fast track, relatively low capex development strategy. The objective to develop an operation capable of cost effectively producing a high grade intermediate product for satellite supply to any one of the existing Namibian uranium mines appears to be a step closer and if the current testwork program is successful then the Company will be in a strong position to deliver on its strategy.

**ENDS**

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For further information on the Company and its projects

- visit the website at [www.deepyellow.com.au](http://www.deepyellow.com.au)

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### **About Deep Yellow Limited**

Deep Yellow Limited is an ASX-listed, Namibian-focussed advanced stage uranium exploration company. It also has a listing on the Namibian Stock Exchange. Deep Yellow's operations in Namibia are conducted by its 100% owned subsidiary Reptile Uranium Namibia (Pty) Ltd.

The Company is currently conducting metallurgical testwork and evaluating fast track development options for its Tumas/Tubas surficial calcrete palaeochannel deposits which are amenable to various physical beneficiation and upgrading techniques that have been successfully tested over the last four years.

Deep Yellow also holds the Omahola Open Pit Alaskite Heap Leach Project on which value engineering studies are being conducted to supplement the recently completed preliminary economic analysis.