## Pilot Scale Metallurgy Confirms Excellent Recoveries at Mt Lindsay

ASX Announcement Friday 31<sup>st</sup> August 2012 Ref: /MS/606/VMS00295

Australian mineral exploration company, Venture Minerals Limited (ASX code: VMS), is pleased to announce the completion of the pilot scale metallurgical program for the Mt Lindsay Tin/Tungsten Deposit. The latest program has delivered an excellent outcome confirming the results already achieved in both the scoping and pre-feasibility studies.

### **Highlights include:**

- High recovery of tin achieved via the gravity circuit with overall recoveries of 72%
- Excellent recovery of scheelite (tungsten ore) achieved via flotation with overall tungsten recoveries of 83% to APT (Ammonia Paratungstate).
- Pilot scale test work produced a high grade tungsten concentrate exceeding 66% WO<sub>3</sub>
- Latest test work also confirmed very high magnetite recoveries of

Results below compare the recoveries achieved from the latest pilot study with those already announced from both the scoping and pre-feasibility studies

Mt Lindsay Studies	Tin Recoveries	Tungsten* Recoveries	Magnetite Recoveries
BFS (Pilot Scale)**	<b>72%</b> (to con)	<b>83%</b> (to APT)	<b>98%</b> (to con)
PFS (March 2011)	73% (to con)	<b>84%</b> (to APT)	<b>95%</b> (to con)
Scoping Study (May 2010)	<b>71%</b> (to con)	<b>80%</b> (to con)	100% (to con)

Notes: Con=Concentrate, APT=Ammonium Paratungstate (intermediate saleable tungsten product)

\* = Tungsten Trioxide (WO<sub>3</sub>)

\*\* = equal blend of Main Skarn and No.2 Skarn representative mill feed material.

The Company is very pleased with the results of the latest metallurgical study, which clearly demonstrates that high quality concentrates of tin, tungsten and magnetite can be achieved through processing Mt Lindsay ore. The consistent nature of the results over three metallurgical studies demonstrates a clear understanding of characteristics of the Mt Lindsay ore bodies, which the Company can apply to a future mining and processing operation.

With the metallurgy now complete the Company can move to finalising the Bankable Feasibility Study which will be announced as soon as possible.



#### **Venture Fast Facts**

ASX Code: VMS Shares on Issue: 255 million Market Cap: \$82 million Cash(June 12 Quarterly): \$10 million

#### **Recent Announcements**

Venture Announces \$17M equity raising (15/08/12)

Major New High Grade Tin Discovery (02/08/12)

DSO Projects Deliver 4mt Ore Reserve (26/07/12)

Mining Lease Granted Livingstone DSO Project (28/05/12)

Venture Expands Management Team with Appointment of CFO (17/05/12)

DSO Scoping Study Update Delivers \$170 million in Net Cash (19/04/12)

Venture Doubles DSO Resource Base, Mt Lindsay (20/03/12)

MOU's Signed for Direct Shipping Ore Off-Take (15/02/12)

DSO Project Fast Tracked – following Signing of MOU with TasRail (24/01/12)

Located in North-West Tasmania 140 years of mining precedent



WA 6008 PO BOX 186 West Perth WA 6872

T: +61 8 9381 4222 F: +61 8 9381 4211

W: www.ventureminerals.com.au

info@ventureminerals.com.au



#### **Details of the Pilot Study**

The comprehensive, pilot scale metallurgical program was part of Venture's Bankable Feasibility Study on the Mt Lindsay Tin/Tungsten Deposit. The Company's focus was to confirm the previous test work completed for scoping and pre-feasibility studies.

The study was managed by Venture's General Manager of Metallurgy, Mr Geoff Beros. Mr Beros is a process engineer with +25 years experience covering all aspects of mineral processing. Holding senior positions with Rio Tinto, Robe River, BHP and more recently as Chief Metallurgist at the Renison Bell Tin mine, Geoff has all the experience necessary to manage the design, construction and commissioning of the Mt Lindsay process plant.

The BFS results were achieved from an intensive metallurgical testing program that has been conducted over the past 15 months. Approximately 3.0 tonnes of sample from Main Skarn and No2 Skarn has been processed to complete the study. Tests were conducted on the skarns individually and also as a blend of the two and were coordinated through three major laboratories in Perth with specialist testing also conducted in laboratories based in Adelaide, Burnie, Gold Coast and Guangzhou, China.

Pilot scale testwork closely simulated the proposed flowsheet with all unit processes being tested in sequence with expected process flows. Prior to commencing pilot scale tests, a significant amount of bench scale testing was conducted to confirm optimum operating conditions for each of the unit processes. As a result, a robust flowsheet has been established that maximises recovery of all products while minimising contamination levels. This robustness enables variable proportions of magnetite, scheelite and cassiterite (tin ore) to be more effectively managed. Small parcels of final concentrates of tin and tungsten have also been produced for off-take discussions.

#### Flowsheet Description (see figure 1)

Run-of-mine ore is initially crushed through primary and secondary crushers to a p95 of 20mm. Crushed ore is then fed to the grinding circuit where a rod mill and a ball mill will operate in conjunction with screens to achieve a primary grind of p80 of 125 microns. After grinding the ore will pass through a low intensity magnetic separation (LIMS) stage to separate the magnetic iron from the remainder of the ore. The magnetic iron is processed in the magnetite circuit by regrinding to a p80 of 45 microns, magnetic reconcentration followed by flotation to remove the remaining iron sulphides. This results in a magnetite concentrate grading 65% Fe which is suitable for production of a blast furnace grade pellet.

The LIMS non-magnetics is transferred to the sulphide flotation circuit to remove sulphide minerals ahead of the concentration processes for scheelite and cassiterite. Testwork has also indicated the potential to produce some copper concentrate grading 24% Cu at a copper recovery of 58%.

Following sulphide flotation, scheelite is recovered through the Guangzhou Research Institute of Non-ferrous Metals (GZRINM) flotation process which is used extensively throughout China for recovering tungsten. Scheelite recovery is very high and also very selective against cassiterite. A high grade, high quality tungsten concentrate grading 66% WO<sub>3</sub> is produced. Initial feedback is that this concentrate is acceptable feedstock for APT production. The process being a whole-ore process also has a high recovery of calcite which has downstream benefits for cassiterite flotation.



Cassiterite is recovered as two separate concentrates. A concentrate is initially produced through traditional gravity processes such as spirals and tables. The latest spiral technology has been applied and finer material which has successfully been concentrated to a gravity product, increasing the proportion of tin recovered by gravity. Some additional recovery of residual scheelite is also included in the process. The gravity tail is reground to a p80 of 45 microns and following pre-treatment and removal of the ultra-fine particles is then processed by tin flotation. Tin concentrates produced via gravity and flotation is combined to produce a final concentrate grading 45% Sn.

Kind regards

**Venture Minerals Limited** 



# Hamish Halliday Managing Director

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Andrew Radonjic, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Andrew Radonjic is a full-time employee of the company. Mr Andrew Radonjic has sufficient experience which is 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Andrew Radonjic consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### MT LINDSAY PROCESS FLOWSHEET **ROM** Ore Feed Tailings Storage Facility Crushing & Grinding P80=125µm Calcite & NON-MAGS Regrind P80=40µm **TAILS** TAILS Magnetic Separation Sulphide Float Gravity Scheelite Spirals Flotation MAGS CON CON Mag Regrind P80=45µm TAILS Gravity Tables Scheelite Pre-treatment Float Copper Concentrate CON CON Tailings Storage Facility Sulphide Flotation Tin Flotation TAILS Gravity Tin Concentrate Tungsten Concentrate Concentrate Magnetite Concentrate APT Tin Production Concentrate

Figure 1