

# ASX/Media release

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# STONEHENGE ACHIEVES 97.6% VANADIUM EXTRACTION IN URANIUM LEACH TEST WORK

Ongoing test work has focused on extracting the full potential value from the Daejon Project, a multi metallic deposit containing 65Mlbs Uranium.

- Pressure oxidation leach tests have achieved an average **uranium extraction of >92%** for five different bulk samples tested to date.
- **Vanadium extraction** results averaged **>70%** for the same five bulk samples tested, representing a 40% improvement on previous project assumptions.
- Pressure oxidation leaching conditions will be optimised and results will feed into a Prefeasibility engineering study.
- Pit optimisation study is progressing, showing an open cut mining operation for the first 10 years of mine life and strong economics.

The Board of Stonehenge Metals Ltd **(ASX: SHE) ("Stonehenge"** or the "**Company")** is pleased to announce metallurgical results from ongoing process development work being performed on the Company's Daejon Project in South Korea.

The Daejon Project (the **Project**) is a multi-metallic deposit containing uranium, vanadium, molybdenum and other associated base metals.

Two process flow sheets are being assessed for their potential to extract uranium, vanadium and molybdenum from the Daejon black shale orebody. The two flow sheets being considered are:

- 1) Pressure oxidation leaching between the temperature range 120-180°C to extract uranium and vanadium simultaneously; and
- 2) Atmospheric acid leaching to selectively extract uranium followed by vanadium salt roasting of the leach residue to recover vanadium.

Variant flow sheets are also being considered as part of the ongoing process development work.

#### **Test Results**

Metallurgical testing to date has primarily been focused on the pressure leach option. Bulk samples have been collected along strike from the Daejon deposit and also within the Chubu exploration adit.

Figure 1 shows sample locations and Table 1 details chemical assays and ore type for each sample.

Uranium assays ranged between 171 and 828 ppm  $U_3O_8$ , with the higher grade uranium ores associated with those samples containing a high portion of carbon. Sample BK008 obtained from the Chubu exploration adit contains 13,000 ppm  $V_2O_5$ , which is exceptionally high grade.

Sample ID		Chemical analysis				
	Ore type	U₃O <sub>8</sub> (ppm)	V₂O₅ (ppm)	Mo (ppm)	Carbon (%)	
BK004/5	Graphitic Schist	175	4,712	220	15.7	
BK007	Graphitic Schist	828	2,927	950	37.2	
BK008	Graphitic Schist	465	13,280	695	18.6	
BK006/10	Shale Ore	342	3,284	615	NA	
BK001/3	Shale Ore	171	4,570	250	2.3	

Table 1. Chemical analysis of bulk metallurgical samples.

NA – Assay not available.

The Daejon deposit has two distinctive ore types with the hard shale ore located along the foot and hanging walls of the deposit, and the primary uranium bearing and main mineralised ore - graphitic schist - located between these walls.



Figure 1. Bulk metallurgical sample locations from Daejon project.

The five samples tested across the Daejon deposit were crushed and milled to an 80% passing sizing of 106  $\mu$ m prior to leaching. Initial testing has been performed at a leach temperature of 180°C

under an oxygen atmosphere, where uranium extraction was extremely rapid with maximum extraction achieved after 30 minutes.

Table 2 shows the maximum extraction of uranium, vanadium and molybdenum for each of the bulk samples within a 1 hour leach residence time.

Sampla ID	Ore type	% Extraction			
Sample ID	Ore type	U <sub>3</sub> O <sub>8</sub>	V <sub>2</sub> O <sub>5</sub>	Мо	
BK004/5	Graphitic Schist	98.8	74.8	80.9	
BK007	Graphitic Schist	94.3	78.3	79.3	
BK008	Graphitic Schist	88.1	97.6	53.1	
BK006/10	Shale Ore	92.1	61.8	77.9	
BK001/3	Shale Ore	91.0	42.1	39.0	
Average		92.9	70.9	66.0	

Table 2. Summary of pressure oxidation results at 180  $^{\circ}$ C and 750 kPa oxygen overpressure.

The current operating cost model assumes an average uranium and vanadium extraction of 90% and 50% respectively. Uranium extraction results showed a modest improvement on the existing model. With respect to vanadium, these current sets of results represent a 40% improvement on the current assumptions used for the Project. Sample BK008 obtained from the Chubu exploration adit has provided the best vanadium extraction result to date at 97.6%.

The benefit of pressure oxidation is that it can also extract molybdenum from the ore and initial results show extraction ranged between 80.9% to 39% with an average of 66%. Further work is required to understand the amount of molybdenum present in the Daejon deposit and the reason for ore variability on molybdenum extraction.

#### Next Steps – Pit Optimisation Study progressing

Stonehenge will now investigate lower leach temperatures. Initial atmospheric leach tests performed at 80°C have provided promising results for both uranium and vanadium. Preliminary tests performed on sample BK004/5 resulted in 92% uranium extraction and 66% vanadium extraction after 4 hours at a controlled acidity. Sulphuric acid consumption was 45 kg acid per dry tonne of ore. The next tests will push to improve on the vanadium extraction and greatly improve the (already encouraging) NPV of the project.

As part of the planned work programme, Stonehenge will quantify the Vanadium and Molybdenum resource to determine the overall economic evaluation of the deposit.

A pit optimisation study is currently underway with resource consultants Optiro. Preliminary findings show that a low cost open cut mining operation is sustainable for the first 10 years of mine life. The study indicates the first 5 years of mining can be achieved at a strip ratio of 1:1.35 and then increasing up to 1:2.31 at 10 years. Further information will be released once the study has been finalised.

Stonehenge Managing Director, Richard Henning stated "Our team continues to make excellent progress in extracting the full potential value of the resource. There is a compelling economic case for the Daejon Project based on these vanadium recoveries. This current round of test work has made significant steps towards Stonehenge achieving its internal target of 75% vanadium extraction. Based on these extraction results, this would place Daejon in the lowest cost quartile of uranium producers after by-product credits. The optimisation study, while still in its early stages, is showing very encouraging results."

For further information visit www.stonehengemetals.com.au or contact:-

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## **About Stonehenge**

Stonehenge Metals Limited (ASX Code: SHE) is developing a multi-mineral project in South Korea. Stonehenge owns 100% of the rights to three projects in South Korea including the Company's flagship Daejon Project which contains the largest uranium resource within South Korea at **65.0Mlbs** (inferred) grading **320ppm eU<sub>3</sub>O<sub>8</sub>** (in accordance with JORC guidelines).

### South Korean Location Map



#### **Competent Persons Statement**

The information contained in this ASX release relating to Mineral Resources has been compiled by Mr. Michael Andrew of Optiro Ltd. Mr. Andrew is a Member of The Australian Institute of Mining and Metallurgy. Mr. Andrew has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Andrew consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.