

31 May 2012

To: Company Announcements officer

### **96% RECOVERY OF SILVER TO BULK SULPHIDE CONCENTRATE.**

Silver Mines Limited (ASX:SVL) is pleased to announce further excellent results from bulk sulphide flotation testwork from its 100% owned Webbs Silver Project located in NE NSW, Australia. The testwork is being conducted by HRL Testing in collaboration with Core Resources, both Australian companies. The program is being managed by metallurgical consultants Mineralurgy Pty Ltd from Brisbane in association with SVL. This work follows on from testwork results that SVL reported on 15 May 2012.

#### **KEY POINTS**

- **Silver recovery of 96% at 212 micron grind achieved to bulk sulphide concentrate at 12% mass pull;**
- **Silver grade of 2,128 g/t Ag in bulk concentrate from head grade of 265 g/t Ag;**
- Recoveries of **copper and zinc were 90% and 88% respectively;**
- Lead recovery of 72%;
- Results are consistent with, and slightly improve on previous sighter testwork which reported silver recoveries of 92% at 212 micron grind and 94% at 75 micron grind;
- Microscopic examination of sulphide mineralogy indicates that on average, 76% of the tetrahedrite is liberated a 'virtual grind' of 53 microns;
- Bulk sulphide concentrate will undergo ultrafine grinding and Albion/CIL processing testwork to investigate potential to produce silver doré and base metal concentrates;
- Cleaner testwork and flotation optimisation to be undertaken on sub-samples of bulk sulphide concentrate seeking to improve flotation performance.

Silver Mines Limited CEO Charles Straw said *"these results follow on from those released on May 15 and provide further confirmation that the high grade Webbs silver resource responds exceptionally well to flotation with very high silver and base metal recoveries reporting to a bulk sulphide concentrate, at a relatively coarse grind size with low mass pull. We now have sufficient quantities of concentrate to proceed to the next phase of testwork, namely testing the feasibility of producing silver doré from the concentrate. Additional optimisation testwork to improve concentrate grades and quality is also planned"*

## METALLURGICAL TESTWORK

The metallurgical testwork reported was conducted on a 155 kg sample with 80% of particle size passing 212 microns. The 155kg samples was divided into three sub-samples which underwent sequential flotation involving three rougher stages and two scavenger stages under typical floatation conditions and reagent schemes in 60 litre flotation cells. The concentrates produced were then recombined into a single sample weighing around 19kg.

The results indicate silver recoveries of 96% into a bulk sulphide concentrate. The mass pull to concentrate is about 12%. The recovery of other potentially payable metals is also quite high, as shown in Table 1. These results are consistent with results the Company reported on May 15 which again indicated high recoveries to a bulk sulphide concentrate and that the coarser 212 micron grind is more selective than a 75 micron grind as indicated in Figure 1. This selectivity is demonstrated in Figure 2, which indicates more rapid recovery at higher grades from the 212 micron samples. In this latest program the first rougher concentrate returned 68% Ag recovery at 5380g/t Ag at a 3.4% yield. An example of this concentrate in a flotation cell is shown in Figure 2.

**Table 1.** Bulk sulphide concentrate grades and recoveries.

	212 micron		Head
	Rec %	Grade	Assay
<b>Ag (g/t)</b>	<b>96</b>	<b>2128</b>	<b>265</b>
<b>Cu (%)</b>	90	2.9	0.35
<b>Pb (%)</b>	72	7.7	1.27
<b>Zn (%)</b>	88	10.5	1.41

### PREPARATION OF SUBMITTED SAMPLES.

Testwork is being conducted on sub-samples from a 250kg composite sample created from 160 individual 1m samples from previous reverse circulation (RC) drilling at the Webbs Main zone. All 160 samples were riffle split from large 35-45kg RC bulk samples that have been securely stored and protected from the weather. Individual sample weights range from 1.5-1.9kg for each split. Samples were selected so as to represent a relatively even distribution of drill intersections through the Main Zone with a natural bias towards nearer surface, thicker intersections. To represent potentially mineable material from an open cut the selected intersections were based on a 50g/t Ag lower cut-off and allowed for some lower grade internal dilution where appropriate. The composite sample was delivered by road courier in a 200 litre drum to HRL Testing located in Brisbane. HRL homogenised the composite sample prior to sample selection for grinding and flotation testwork.

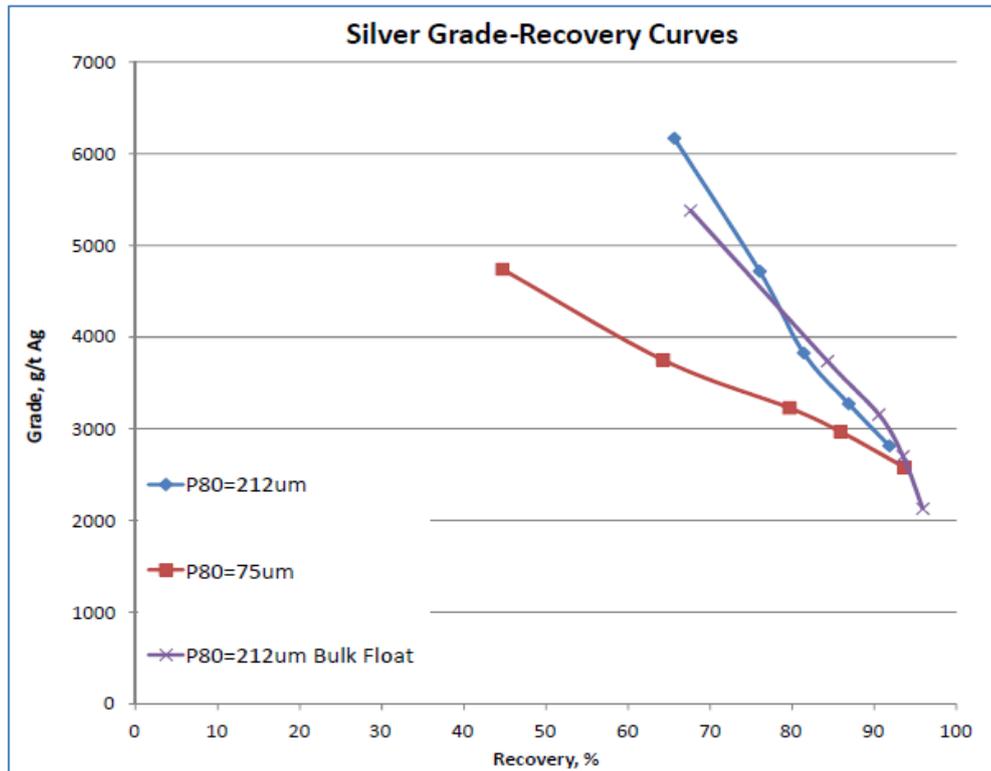


Figure 1. Silver grade x recovery curves



Figure 2. First rougher concentrate, assaying 5380g/t Ag with 68% Ag recovery

## **SULPHIDE MICROSCOPY.**

McArthur Ore Deposit Assessments (MODA) was commissioned by SVL to conduct an assessment of the sulphide mineral occurrences at Webbs. The information gained provides valuable input data for the metallurgical evaluation being undertaken. MODA were provided with 25 samples of drill core which contain typical sulphide vein assemblages occurring at Webbs, as identified by SVL geologists. Results of observations for all samples have been received. These indicate the silver bearing mineral, tetrahedrite, dominantly appears as freely occurring grains using a 53 micron mask. The 53 micron mask represents a 'virtual grind size' of 53 microns. The amount of free tetrahedrite at the 53 micron mask ranges from 35 to 87%, and averages 76%. This indicates the potential for excellent liberation of silver bearing tetrahedrite after ultra-fine grinding to less than 20 microns.

## **NEXT STEPS.**

The bulk concentrate will now be subjected to ultra-fine grinding (UFG) to produce three different sized samples. These samples will undergo (i) direct cyanide leach as well as (ii) Albion leach followed by cyanide leach. This will determine the performance of Ag recovery at different grind sizes and leach conditions in order to establish optimal conditions for cyanide solubility of Ag and potential doré production. Indicative power requirements for UFG can also be established from this process.

Flotation testwork will also be conducted to determine if base metal concentrates can be produced from the Albion leach residue. Simultaneously, flotation optimisation testwork will be carried out including concentrate cleaning to reject more non-sulphide gangue and potentially increase metal recoveries and concentrate quality.

Silver Mines looks forward to providing the results of the metallurgical testwork program as they become available.

Exploration drilling at Webbs is now expected to start in approximately 4-6 weeks due to current work commitments of the drilling contractor. Silver Mines has a large program of drilling planned for completion by the end of 2012. This program is designed to increase the current resource at Webbs by targeting extensions at depth and in near surface gaps in the current drill pattern.

Please direct any queries regarding the content of this report to Charles Straw (CEO) on +61 2 9253 0900 or [cstraw@silverminesltd.com.au](mailto:cstraw@silverminesltd.com.au).

**Competent Person Statement.**

*The information in this Document that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr David Hobby, consulting geologist to SVL, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Hobby 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 Hobby consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

**Forward Looking Statement.**

*Certain statements made during or in connection with this release, including, without limitation those concerning exploration targets, upcoming testwork and the results of additional flotation testwork contain or comprise certain forward-looking statements regarding Silver Mines Limited's exploration operations and results. Although Silver Mines Limited believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, testing results, success of business and operating initiatives, changes in the regulatory environment and other government actions and operational risk management. Investors are cautioned that forward looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein. Silver Mines Limited undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of anticipated events.*