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Market Announcements Platform
ASX Limited
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UPDATE ON METALLURGICAL EVALUATION OF FAIR BRIDE SULPHIDE ORE

- Primary gold process recoveries in the range of 91-95% from a mass pull of below 20% have been achieved during flotation testing
- Process recoveries of over 80% has been achieved on flotation concentrates after grinding
- A total recovery range of 74% to 78% is demonstrated
- Both processes are yet to be optimised and significant improvements are expected
- The next phase of testing will focus on higher grade ore to improve the overall gold recovery

Mozambique focussed gold explorer Auroch Minerals (ASX:AOU) (**Auroch** or the **Company**) is pleased to provide an update on progress of its metallurgical test programme (ASX:AOU 14 March 2014). The focus is on the Fair Bride sulphide ore body where Auroch has recently updated the resource base to bring the estimate into line with the 2012 JORC requirements (ASX:AOU 14 November 2014). Importantly when compared to previous estimates the resource update showed reduced tonnages at a higher grade at Fair Bride and this has significant implications for future metallurgical test work programs.

Fair Bride MRE for Measured and Indicated Resources November 2014.

Deposit	Category	Cut-off Au (g/t)	Tonnes (kt)	Grade Au (g/t)	Total Au (Oz)
Fair Bride	Measured	1.0	2,893	3.14	291,600
Fair Bride	Indicated	1.0	2,665	3.07	263,300
Fair Bride Measured & Indicated Resources			5,557	3.11	554,900

Table 1. Updated MRE for Measured and Indicated resources at Fair Bride

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Metallurgical Test Program

The process under development for Fair Bride consists of a sulphide flotation plant which will produce a gold-rich concentrate. This concentrate, which is typically 10-20% of the main plant feed tonnage, will then be processed using a combination of Ultra-Fine Grinding (UFG) and oxygen assisted cyanide leaching (Leachox®), before final recovery in a conventional carbon circuit. Testing of various grind sizes between 45 micron to 14 micron has been completed with the 14 micron sample delivering the highest recoveries.

Oxides and Transitionals

Further work on oxide ore conducted at SGS in Johannesburg confirmed the amenability of the material to direct cyanidation and recoveries of >95% were achieved. In order to fully develop the process route transitional samples were also tested and as previously announced, an overall recovery of 79.5% was achieved after concentrate treatment and tailings leach. The work was conducted at a grind of 27µm and as shown in the Sulphide flotation test work (Concentrate Treatment section) recoveries are interpreted to improve with a reduction in grind size, which will be tested during the next stage of test work.

Flotation on Sulphide Ore

The use of flotation on pyrite/arsenopyrite ores containing gold is a well-established metallurgical application and is used in many gold deposits worldwide. Previous flotation test work on Fair Bride ore date back to 2006, when high-grade ore (3.73 g/t Au) was tested at SGS Laboratories in Johannesburg. More recently a composite sample of sulphide ore with a 2.1g/t Au head grade was tested at Maelgwyn Laboratories in Johannesburg to determine the flotation recovery at a nominal grind size of P₈₀=75 microns, results are presented in Table 2.

Year	Laboratory	Head Grade g/t Au	Au Recovery to Concentrate %	Mass Pull % head feed	Concentrate Grade g/t Au
2006	SGS	3.73	98	19	21.0
2014	Maelgwyn	2.10	91	14	15.3

Table 2: The results of flotation tests on sulphide ores from Fair Bride are summarised.

The results shown above refer to first pass rougher flotation only. Test work done at SGS in 2006 also reported significant concentrate mass reduction by incorporating a cleaner flotation stage and using gangue depressants to suppress talc. This work showed it was possible to reduce the concentrate mass to just over 10% and increase the final concentrate gold grade from 21 to 33 g/t or higher with Re-cleaning as shown in the 2006 test work. This result is considered by Auroch to be significant in terms of the subsequent concentrate treatment process and will be the subject of the next phase of test work.

Concentrate Treatment

Three means of realising the gold value from concentrates have been investigated by Auroch:

1. Direct sale of the concentrate to third party processors. This is the subject of an ongoing investigation but no firm offers have been received as yet.

2. UFG – recent technology improvements in grinding have led to the successful acceptance of this technology in a number of operations worldwide especially when combined with oxygen injection using High Shear Reactors.
3. BIOX – this process is well established for the treatment of sulphide concentrates. It is capital intensive and the requirement to neutralise acid formed during the process impacts on operating costs in regions where cheap limestone is not available. BIOX was investigated for Fair Bride concentrates by SGS in 2006 and the report concluded that the presence of talc in the concentrates and the need for Sulphuric Acid addition would cause difficult and expensive operating conditions. For these reasons, BIOX has not been pursued further at this stage.

In the current program preliminary tests on Fair Bride concentrate containing 15.3 g/t gold, were done at Maelgwyn in Johannesburg in July 2014 with analytical work being conducted by SGS (SANAS Acc Lab #T0169). The results of grinding followed by straight cyanidation for gold dissolution are shown below in Table 3.

Grind Size (μ)	Gold Recovery %
45	59.2
22	66.1
14	73.1

Table 3. As expected an increase in gold recoveries is strongly related to grind size.

Importantly the use of oxygen and High Shear reactors to improve the cyanidation step were tested with positive results and results are shown below in Table 4:

Grind Size Size (μ m)	Aachen Oxidation	Gold recovery %
45	10 Pass	74.3
22	10 Pass	77.8
14	10 Pass	81.4

Table 4. Significantly higher gold recoveries gained when oxidation is added to the process route.

Process Development

Interpretation of previous work combined with new results show that overall gold recovery from Fair Bride sulphide ore will be in the range of 74-78%.

Following the revised MRE with its higher grade and lower tonnages, process design work will focus on processing higher grade ore with a grade of approximately 3 g/t as well as modifying the flotation plant to reduce concentrate mass. Commercial applications of UFG, including the Albion process which has also been successful in similar scenarios, will be tested. The combined effect of these factors will optimise the recovery of gold from Fair Bride.

Discussion

Auroch's Chairman Glenn Whiddon stated "We are incredibly pleased with both the updated resource and the recent metallurgical test work at Fair Bride. These results validate the strategic focus on Fair Bride and will form the backbone of a scoping study, the results of which will be released to the market as soon as possible. Importantly the sulphide testwork has strongly indicated a well understood process

route that is in production at several gold mines around the world. Our strong metallurgical team are confident we can further optimise the process to improve the recovery even further”.

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The information in this report that relates to exploration results is based on information compiled by Mr Gordon Koll who is a registered Professional Natural Scientist (Pr.Sci.Nat.) under the South African Council for Natural Scientific Professions (SACNASP) and a Fellow of the Geological Society of South Africa, which is recognised as a RPO by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code 2012). Mr Koll is a full-time employee of the Company. Mr Koll 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 2012 Edition of The JORC Code. Mr Koll consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

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