

## ASX Release

9 December 2014

### Company Details

ASX Code:	STB
Share Price	\$0.20
Market Cap	\$28M
Shares on issue	139M
Company options	23M
Cash at Bank	\$9M

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## Colluli PFS Mass Balance Modelling Completed

South Boulder Mines (ASX: STB) ("South Boulder" or "the Company") is pleased to advise it has finalised the mass balance modelling for the Colluli Potash Project Pre-Feasibility Study (PFS).

The mass balance modelling is underpinned by metallurgical testwork completed at the Saskatchewan research council in Saskatoon, Canada.

In October 2014, South Boulder announced successful production of commercial grade potassium sulphate (Sulphate of Potash), a potash fertiliser which achieves a substantial price premium over the more common potassium chloride. Highly favourable flotation test results were also announced with potassium recoveries of over 80% (refer to ASX announcement 22<sup>nd</sup> October 2014).

Mass balance modelling in combination with laboratory testwork confirms the following parameters for the process design:

#### Flotation potassium recovery

Sylvinite/Carnallite potassium recovery:	90%
Kainite potassium recovery:	91%
Overall process potassium recovery:	85%
Seawater consumption:	11 tonnes/tonne of product
Recovery ponds:	10m <sup>2</sup> /tonne of product

Further optimisation in the process design has been identified and will be further evaluated for the Definitive Feasibility Study (DFS).

South Boulder Managing Director, Paul Donaldson, said:

"We are very pleased with these outcomes. The potassium recovery is very high relative to other potassium sulphate production processes, which is what we expected, and are now delighted to see.

"The flotation results are also excellent, giving us confidence in our reagent selection process. The solar pond footprint is very small in contrast with operations producing potassium sulphate from brines. Solar pond footprints in potassium sulphate production facilities in the US are up to 400m<sup>2</sup> per tonne of product.<sup>1</sup> The smaller pond footprint highlights the value of starting with all salts in solid form. Our current plan is to supply the processing plant with seawater from the Red Sea. The water volumes required highlight the importance of our coastal access for continuous and uninterrupted supply of water for the processing plant, which is maximised by the solar recovery ponds."

The results are being used for the pre-feasibility process plant design which is already well advanced. The PFS is expected to be complete in February 2015.

<sup>1</sup> Compass Minerals, <http://www.gslminerals.com>

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Paul Donaldson  
**MANAGING DIRECTOR**

Amy Just  
**COMPANY SECRETARY**

**About South Boulder Mines Ltd**

South Boulder is an ASX-listed (ASX: STB) resources company currently developing the emerging, world-class Colluli Potash Project located in Eritrea, Africa. The Colluli Potash Project is located in the Danakil Depression region of Eritrea ~65km from the coast comprising approximately 500km<sup>2</sup>. South Boulder Mines Limited has been actively exploring for potash at the Colluli Potash Project in Eritrea since 2009. Colluli is the world's shallowest potash deposit (starting at 16m), facilitating the low capex open pit mining and favourably positioned to supply the world's fastest growing markets.

The JORC/NI43-101 Compliant Mineral Resource Estimate for the flagship Colluli Potash Project now stands at 1.08 billion tonnes @ 18% KCl for 194Mt of contained potash. Substantial project upside exists in higher production capacity and market development for other contained products. Engineering Scoping Study (ESS) results were favourable, proving that an economic 2Mt p.a. potash mine can be built at a materially lower cost than typical potash development. The start-up capital cost for Colluli is one of the lowest in the industry; couple this with cheap expansion capability via open pit mining methods, excellent infrastructure and location, and it becomes even more attractive, ensuring South Boulder gains a high level of investment interest for the long term. South Boulder Mines Ltd is working steadily towards developing the world's first, modern, open pit potash mine.

**Competent Persons and Responsibility Statement**

The Colluli Potash Project has a current JORC/NI43-101 Compliant Measured, Indicated and Inferred Mineral Resource Estimate of 1,079.00Mt @ 17.97% KCl or 11.35% K<sub>2</sub>O (total contained potash of 194.09Mt KCl or 122.61Mt K<sub>2</sub>O). The resource contains 261.81Mt @ 17.94% KCl or 11.33% K<sub>2</sub>O of Measured Resources, 674.48Mt @ 17.98% KCl or 11.36% K<sub>2</sub>O of Indicated Resources and 143.50Mt @ 18.00% KCl or 11.37% K<sub>2</sub>O of Inferred Resources.

This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported by independent consultants ERCOSPLAN and announced by South Boulder on 16 April 2012.

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Greg Knox using estimates supplied by South Boulder Mines Ltd under supervision by Ercosplan. Dr Henry Rauche and Dr Sebastiaan Van

Der Klauw are co-authors of the JORC and NI43-101 compliant resource report. Greg Knox is a member in good standing of the Australian Institute of Mining and Metallurgy and Dr.s' Rauche and Van Der Klauw are members in good standing of the European Federation of Geologists (EurGeol) which is a "Recognised Overseas Professional Organisation" (ROPO). A ROPO is an accredited organisation to which Competent Persons must belong for the purpose of preparing reports on Exploration Results, Mineral Resources and Ore Reserves for submission to the ASX.

MrKnox, DrRauche and Dr Van Der Klauw are geologists and they have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they have undertaken to qualify as a Competent Person as defined in the 2004 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Knox, Dr Rauche and Dr Van Der Klauw consent to the inclusion in the report of the matters based on information in the form and context in which it appears.

**Quality Control and Quality Assurance**

South Boulder Exploration programs follow standard operating and quality assurance procedures to ensure that all sampling techniques and sample results meet international reporting standards. Drill holes are located using GPS coordinates using WGS84 Datum, all mineralisation intervals are downhole and are true width intervals. Assay values are shown above a cut-off of 6% K<sub>2</sub>O. The samples are derived from HQ diamond drill core, which in the case of carnallite ores, are sealed in heat sealed plastic tubing immediately as it is drilled to preserve the sample. Significant sample intervals are dry quarter cut using a diamond saw and then resealed and double bagged for transport to the laboratory. Halite blanks and duplicate samples are submitted with each hole.



Chemical analyses were conducted by Kali-Umwelttechnik GmbH Sondershausen, Germany utilising flame emission spectrometry, atomic absorption spectroscopy and ion chromatography. Kali-Umwelttechnik (KUTEC) Sondershausen1 have extensive experience in analysis of salt rock and brine samples and is certified according to DIN EN ISO/IEC 17025 by the Deutsche Akkreditierungssystem Prüfwesen GmbH (DAR). The laboratory follows standard procedures for the analysis of potash salt rocks chemical analysis (K<sup>+</sup>, Na<sup>+</sup>, Mg<sup>2+</sup>, Ca<sup>2+</sup>, Cl<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, H<sub>2</sub>O) and X-ray diffraction (XRD) analysis of the same samples as for chemical analysis to determine a qualitative mineral composition, which combined with the chemical analysis gives a quantitative mineral composition.

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