

## ASX Release

22 October 2014

### Company Details

ASX Code:	STB
Share Price	\$0.175
Market Cap	\$24M
Shares on issue	139M
Company options	23M
Cash at Bank	\$10M

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## Lab Scale Potassium Sulphate Production Affirms Simple, High-Yield SOP Processing Path

### Highlights

- Metallurgical testing has produced commercial-grade SOP
- Production affirms simple, high-yield SOP processing route
- Continued metallurgical success following testwork which:
  - achieved potassium recoveries exceeding 80% from flotation testing
  - eliminated grinding and some thickening infrastructure from initial process design
- Testing will continue to refine processing route
- Pilot plant to add robustness to the DFS plant design
- PFS on track for delivery in early 2015

South Boulder Mines (ASX: STB) ("South Boulder" or "the Company") is pleased to announce metallurgical testing conducted at the Saskatchewan Research Council laboratory in Canada has successfully resulted in the production of commercial-grade potassium sulphate (SOP).

Following recently announced positive flotation results, which have demonstrated potassium yields of over 80%, commercial grade SOP has been produced by combining decomposed kainite and sylvite under ambient conditions, affirming the simple, high yield process design developed for feasibility studies.

South Boulder's Colluli Potash Project in Eritrea, East Africa, hosts a globally unique deposit of sylvite, carnallite and kainite salts which will be fully utilized to produce the premium potash product. Utilisation of all salts reduces mining strip ratio and operating costs, and allows the production of sulphate of potash (SOP) which carries a substantial price premium over potassium chloride (Muriate of potash).

Standard and granular SOP has grades of 50% K20. The Colluli process precipitated above 50% K20 grade SOP as indicated by X-ray Diffraction Analysis (XRD).

Continued refinement of this process path is anticipated to liberate higher grades.

South Boulder Managing Director Paul Donaldson said: "The metallurgical testing to date has progressed exceptionally well for our SOP development path. We are excited by the simplicity of the process which is effectively flotation and mixing of recovered potassium salts from the open pit. Taking the

requisite time to get the process design right has reduced the process plant capital and demonstrated successful generation of the premium potash product, potassium sulphate (SOP). We have been thoroughly testing the processing philosophy with our experts in Canada and it is very pleasing to see the optimal path sufficiently matured to produce commercial grade SOP."

Mr Donaldson added "The more we learn about the resource, the more confident and excited we are about the project potential. Metallurgical test work will continue to refine this chosen processing path to produce even higher grades and we will be commissioning a pilot plant to use material from Colluli to add robustness to the plant design as we progress from pre-feasibility to definitive feasibility. Pre-feasibility study results are planned for February 2015."

#### **More information:**

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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 ionchromatography. Kali- Umwelttechnik (KUTEC) Sondershausen<sup>1</sup> have extensive experience in analysis of salt rock and brine samples and is certified according by DIN EN ISO/IEC 17025 by the Deutsche AkkreditierungssystemPrüfwesen GmbH (DAR). The laboratory follow 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.