



An emerging potash company in the business of growth "The worlds first open pit potash project"

Supplying fertiliser to meet growing demand for food and shareholder wealth

## Disclaimer



#### Forward-Looking Statements

The presentation represents South Boulder Mine's best judgment at the time of presentation. This document is in summary form and does not purport to be all inclusive or complete. The contents include forward looking statements prepared on the basis of assumptions which may prove to be incorrect. This presentation should not be relied upon as a recommendation or forecast by South Boulder Mines Limited. No representation or warranty is made as to the accuracy, completeness or reliability of the information.

#### **Competent Persons**

Information that relates to Exploration Results including exploration data and geological interpretations is based on information compiled by Lorry Hughes who is a full time employee at South Boulder Mines Ltd. Exploration results from the Duketon Nickel JV has been supplied by Independence Group who are operator of the Duketon Nickel JV. Lorry Hughes is a member of the AusIMM and has experience which is relevant to the style of mineralisation and type of deposits under consideration, and to the activities which is being undertaken 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'. Lorry Hughes consent to the inclusion in the report of the matters based on his information in the form and context in which it appears. Most data, interpretation and diagrams for the Duketon Nickel JV have been provided courtesy of Independence.

Information that relates to the Mineral Resource estimates supplied by South Boulder Mines Ltd are done so under supervision by Ercosplan. Dr Henry Rauche and Dr Sebastiaan van der Klauw are co-authors of the JORC and 43-101 compliant resource report. Lorry Hughes is a member in good standing of the Australian Institute of Mining and Metallurgy and Drs 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. Mr Hughes, Mr Rauche and Mr van der Klauw are geologists and they have sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they have undertaken 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 Hughes, Mr Rauche and Mr van der Klauw consent to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Hughes is a full-time employee of the company. Mr Rauche and Mr van der Klauw are employed by the Ercosplan Group of Companies.

#### JORC – Exploration Targets

The Colluli Potash Project has a current JORC/43-101 Compliant Measured, Indicated and Inferred Mineral Resource Estimate of 1.079Bt @ 17.97% KCI (total contained potash of 194Mt); Includes higher grade sylvinite of 114.60Mt @ 28.56% KCI or 18.04% K<sub>2</sub>O. The resource contains 261.81Mt @ 17.94% KCI in the Measured Category. 674.48Mt @ 17.98% KCI in the Indicated Category and 143.50Mt @ 18.00% KCI in the Inferred Category. The current Mineral Resource Estimate is included in the current exploration target of 1.25 – 1.75 billion tonnes @ 18-20% KCI. The potential quantity and grade of the total current exploration target which includes the current Mineral Resource Estimate is conceptual in nature and there has been insufficient exploration to define a Mineral Resource other than the current Mineral Resource Estimate and it is uncertain if further exploration will result in the determination of a Mineral Resource Estimate other than the current Mineral Resource Estimate.

It is common practice for a company to comment on and discuss its exploration in terms of target size and type. The information in this presentation relating to exploration targets should not be misunderstood or misconstrued as an estimate of Mineral Resources or Ore Reserves. Hence the terms Resource(s) or Reserve(s) have not been used in this context. The potential quantity and grade stated or implied is conceptual in nature, since there has been insufficient work completed to define them beyond exploration targets and it is uncertain if further exploration will result in the determination of a Mineral Resource Estimate other than the current Mineral Resource Estimate.

#### 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 GPO coordinates using WGS84 Datum, all mineralisation intervals are downhole and are true width intervals. Assay values are shown above a cut-off of 6% K20. The samples are derived from HQ diamond drill core which in the case of carnalite 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 spectrometry and ionchromatography. Kali-Umwelttechnik (KUTEC) Sondershausen1 have extensive experience in analysis of salt rock and brine samples and is certified according by DIN EN ISO/IEC 17025 by the Deutsche Akkreditierungssystem Prufwesen GmbH (DAR). The laboratory follow standard procedures for the analysis of potash salt rocks? chemical analysis (K+, Na+, Mg2+, Ca2+, Cl-, SO42-, H2O) 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.

## Summary





Developing the Colluli Open Pit Potash Project, Eritrea, Red Sea Coast – Strategic Asset.

Negotiations underway with ENAMCO on a 50/50 profit share deal structure, to attain mine approvals and financing.

DFS underway, complete in 2013 targeting an initial 1Mtpa production in 2016.

- Board and management additions.
- Well-funded ~A\$18 million cash after demerger.
- All non-potash assets to be transferred into a wholly-owned subsidiary Duketon Mining Ltd - A\$1 million + listed equities (~A\$2.4m). ATO Draft ruling received...no tax liability





Further to the ASX announcements dated 5<sup>th</sup> and 27<sup>th</sup> November, South Boulder advises that negotiations are continuing regarding the ENAMCO's participation interest in the Colluli Potash Project.

ENAMCO has made it clear that it fully supports the development of the Colluli Potash Project by South Boulder and is keen to conclude negotiations to enable licensing and development to proceed.



## Potash Market and Strategic Investors

**MOP Demand** 





Roots For Growth Video Animation Highlighting the Role of Fertilizers in Global Agriculture TO VIEW VISIT www.rootsforgrowth.com



- Stage 1 Colluli production to deliver 1Mtpa of MOP into a 50-60Mtpa market
- MOP price is ~US\$470/tonne
- High barriers to new production remain
- Highest levels of interest in STB and Colluli is from – Asia
- Expect Middle Eastern demand to grow
- Non-traditional debt funding available

"The geographical areas of The Middle East and Asia are most comfortable with Government to Government relationships and understanding the Colluli project."

## **Colluli Potash Resource Expansion**





#### JORC/43-101 Exploration Target: 1.25 – 1.75Bt @ 18-20% KCI

\*The potential quantity and grade of the total current exploration target is conceptual in nature and there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource Estimate



- Col-093 Carnallite and Kainite
  25m thick from 44.37m
- Col-095 Sylvinite ~ 2.5m thick from 41.88m
- Col-097 Sylvinite ~ 2.6m thick from 48.25m
- <u>A number of new Sylvinite</u> <u>assay results outstanding</u>
- Exploration focused on areas that have impact in early years of operation such as high grade
   Sylvinite in very shallow positions

## Colluli Potash Engineering – DFS Mining



**Ground Water** 



Pit wall slope design

# Mining Method – DFS Mining

### **Clastics**

- <sup>b</sup> Hydraulic excavator and trucks
- Free digging (no blasting)
- Separate sand dominant and clay dominant layers for
- construction materials

#### Rock Salt and Marker Beds

- Drill and blast
- Hydraulic excavator and trucks
- Stockpile separately

### <u>Sylvinite</u>

- Surface miner to cut 40cm layers
- Front end loader and trucks
- Separate high grade ore, low grade ore, high impurity ore and waste







## Sylvinite Processing

### <u>Sylvinite</u>

Test work has confirmed flotation as a viable process, up to 90% recovery – *80% used in ESS-1* 

96% KCI powder product (MOP) – Standard product

Dedicated road transport 70km by road to Anfile Bay - Simple

Loading & Shipping – 1 barge required, 2 used in ESS-1

#### Carnallite Processing

Recovery rates of 90 per cent would be achievable using solar decomposition followed by standard froth flotation Resource utilisation & waste to ore strip ratio improves significantly, Capex goes up significantly

"A number of key technical areas showing positive results"









## Colluli Potash Engineering - Infrastructure



"ESS-1 is out of date"



- Dryer, storage export terminal and main accommodation village located at Anfile Bay
- Opportunities to reduce
  capital by companies
  supplying infrastructure for
  contracts Fuel
- Port options look very attractive for reduced Stage 1 costs and cost effective expansion

## Colluli Potash Engineering - Infrastructure

SOUTH BOULDER
MINES LTD

$\Rightarrow$			
	ltem	Engineering Scoping Study ESS-1 <sup>1</sup> November 2011 <sub>Sylvinite Only</sub>	Engineering Scoping Study ESS-2) <sup>1</sup> November 2012 Sylvinite & Carnallite
	Annual Steady State MOP production (Mt)	1.00	2.00
	Mining Method	Open Pit	Open Pit
7	Processing Method	Flotation	Solar decomposition & flotation
	Mine Life	17 Years	26 Years
-	Recovery (%)	80	90
	Pre-production Capital USD (incudes 15% Contingency)	0.74 Bn	1.57 Bn
	Average LOM Strip Ratio (Waste : Ore)	13.7 : 1.0	6.4 : 1.0
01-10	Average LOM Operating Cost USD/t	263 <sup>2</sup>	187 <sup>2</sup>



- ESS-2 has demonstrated the scalability of Colluli
- ESS-1 is out of date
- DFS is indicating a number of key positive impacts to further reduce estimates of operating costs
  - Further upside remains

- 1. Engineering scoping studies are completed to +/- 40% accuracy
- 2. Operating costs exclude contingency. Note operational costs in ESS-1 commence significantly lower than average LOM costs largely due to lower initial strip ratios

## **Concluding Comments**



STB has a strong and respectful partnership with Eritrea and its people

Strong Government support has allowed STB to accelerate the time line towards production

Colluli can be a strong economic project if handled correctly

The low start-up and sustaining capital expense and strategic export location will ensure Colluli will be a sought after asset for many decades to come

South Boulder is well funded for the DFS

Duketon Mining Limited demerger allows STB Shareholders to better participate in the potential upside at Duketon from discovery





### **Listing Details**

### ASX: STB, Berlin: SO3-Ber, Frankfurt: SO3-Fra, ADR: SBMSY

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