

# South Boulder Mines

4<sup>th</sup> March 2015

## South Boulder Mines' PFS demonstrates Colluli is a globally significant project

Wednesday, March 04, 2015

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South Boulder's PFS on its 50% owned Colluli Project has demonstrated that it is expected to become one of the world's most significant and lowest cost potassium sulphate operations.

### Analysis

South Boulder's Pre-Feasibility Study on its 50% owned Colluli Project has demonstrated that the project is expected to become one of the world's most significant and lowest cost potassium sulphate operations.

The company is taking a more measured approach to mitigate capital, commercial, process and safety risks by starting with a smaller module size from which to grow.

This reduces funding requirements and increases speed to market.

Colluli is located around 70 kilometres from the coast making it one of the most accessible potash deposits globally.

The project is favourably positioned relative to key growth markets for potassium-bearing fertilisers and is the shallowest known potassium bearing evaporite deposit in the world.

### Upcoming catalyst:

- Complete the definitive feasibility study in Q3 2015.

South Boulder remains well-funded with \$9 million cash at bank.

[South Boulder Mines \(ASX:STB\)](#) has delivered the Pre-Feasibility Study (PFS) on its 50% owned Colluli Project, located in the Danakil region of Eritrea.

The PFS demonstrates that Colluli is expected to become one of the world's most significant and lowest cost potassium sulphate operations.

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The strategic approach for the development of the Colluli Project is to bring the resource into production using the principles of modularity, risk mitigation and full resource utilisation.

The first module serves as a platform for growth which balances risk, economic returns, fundability and market penetration.

Paul Donaldson, managing director, commented:

"We are extremely pleased with the highly favourable outcomes of the pre-feasibility study for the development of the Colluli Potash Project, and the endorsement of both the STB and Colluli Mining Share Company (CMSC) boards to move the project forward to complete the definitive feasibility study in Q3 2015."

South Boulder and the Eritrean National Mining Company (ENAMCO) are equal shareholders of the Colluli Mining Share Company (CMSC) which will develop the Colluli project.

Colluli currently hosts 1.289 billion tonnes with an average grade 10.76% K<sub>2</sub>O, with the project a very large, long life, at surface deposit, that is highly amenable to open cut mining methods and is in close proximity to the coast.

## **PFS Highlights include:**

- PFS demonstrates Colluli is expected to become one of the world's most significant and lowest cost potassium sulphate operations.
- Operations will focus on the production of high quality potassium sulphate (SOP) – a speciality potassium fertiliser with a price premium over the more common potassium chloride (MOP).
- World's shallowest known potassium bearing evaporite deposit.
- Only 75km to proposed Product Export Terminal on the coast.
- 1.289Bt resource at 10.76% K<sub>2</sub>O for 152.7Mt contained K<sub>2</sub>O (97% measured and indicated) supports a +100 year mine life.
- PFS examines a two-module development over a 30 year mine life, but the large 1.289Bt resource can accommodate substantial expansions.
- Open pit mining using conventional truck and shovel (no blasting).
- Development Capital for Phase I of US\$442 million (including US\$48 million contingency).
- Phase I development capital includes project owned/built road and 900kt per annum product export facility (PET).
- Production output of 425kt per annum of SOP, increasing to 850kt per annum from Year 5.
- Bottom quartile C1 mine gate cash cost of US\$141/t of SOP (LOM Average).
- Total cash cost of US\$189/t of SOP (LOM Average).
- Assumed real average SOP price of US\$588/t FOB Anfile Bay - determined through a comprehensive marketing study.
- Average undiscounted after tax cashflow of US\$186 million per annum over 30 year mine life (LOM Average).
- Undiscounted after tax cumulative cashflow of US\$5.1bn over 30 year mine life.
- Significantly leveraged to rising fertiliser prices.

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- Substantial opportunities to improve project economics remain.
- Approval granted from both STB and CMSC boards to progress to definitive feasibility study (DFS).
- Approvals and permitting processes commenced.
- DFS to be completed in Q3 2015. First production planned for 2018.

NOTE: All figures quoted above are on a 100% project level basis (STB holds a 50% interest).

The study was led by Lycopodium Minerals Pty Ltd.

Donaldson added, "We have already commenced optimisation testwork for the process plant, and as we continue the definitive feasibility work, we will further advance conversations with strategic partners to assist with development of this globally significant project."

Berhane Habtemariam, general manager, ENAMCO, commented: "We are very pleased that the pre-feasibility study has been successfully completed and shows a very robust project.

"Our Colluli resource appears to have all the makings of world class project which will play an important role in developing future skills for our maturing mining industry.

"We look forward to continuing our ongoing relationship with STB as we move further into the project development."

## Additional PFS details

The PFS was based on:

- Production commences in 2018.
- Colluli mine gate C1 cash costs at the bottom of the cost curve.
- Phase I annual free cash flows of approximately US\$100m.
- Phase II annual free cash flows of approximately US\$210m.
- Phase II part funded through project cash flows.
- 1.289 billion tonne resource with average grade of 10.76% K<sub>2</sub>O.
- >100 year mine life based on Measured and Indicated resource categories.
- Approvals and permitting processes commenced.
- Approval by STB and CMSC board to progress definitive feasibility study.
- Definitive feasibility study to be completed in Q3 2015.

## Colluli resource composition

The resource comprises three potassium bearing salts; sylvinite, carnallite and kainite.

These salts are suitable for the production of potassium chloride and/or potassium sulphate and potassium magnesium sulphate.

Potassium sulphate and potassium magnesium sulphate are high quality potash fertilisers that carry a price premium over the more common potassium chloride.

Potassium sulphate and potassium magnesium sulphate have limited production centres globally.

Substantial upside for the project exists from the exploitation of other contained products within the resource such as high purity rocksalt, kieserite (magnesium sulphate), gypsum and magnesium chloride.

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## The Colluli deposit comprises:

- Measured mineral resource: 303Mt at 10.98% K<sub>2</sub>O;
- Indicated mineral resource: 951Mt at 10.89% K<sub>2</sub>O; and
- Inferred mineral resource: 35Mt at 10.28% K<sub>2</sub>O.

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