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Colluli – Unique, Unrivalled, Unsurpassed Potassium sulphate (SOP) for the future

Proactive Investors Investment Forum, March 2015
Paul Donaldson – Managing Director

ASX:STB

www.southbouldermines.com.au

Helping grow a better future

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The Colluli Resource – Positively Unique

- **Diverse range of potash salts:** Suitable for low energy, high potassium yield production of sulphate of potash (SOP), and in the long term, a broad range of potash fertilisers
- **Shallow mineralisation:** commencing at 16m making Colluli the shallowest known potash deposit globally
- **Highly amenable to open cut mining:** a safe, proven mine method which results in high resource recovery and is highly favourable to support modular growth
- **Unmatched proximity to coast:** with only 75km to the Red Sea, Colluli is the closest potassium sulphate deposit to a coastline globally
- **Favourable geography:** relative to key growth markets for potash fertilisers
- **Massive 1.289bt resource:** with a combination of potassium salts suitable for low energy, high yield production of potassium sulphate (SOP or sulphate of potash)



Potash Overview

Potash: generic term used to describe a variety of potassium bearing minerals and manufactured chemicals used primarily as fertiliser.

- **Essential to the world's food supply**
- **No known substitute**

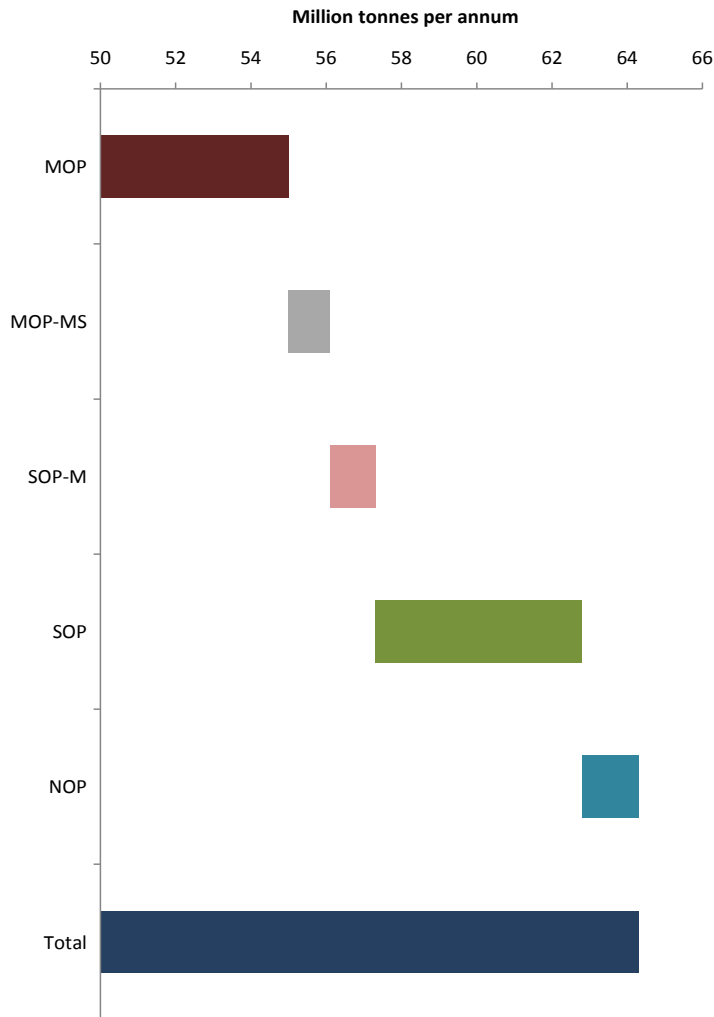


Global population growing at 80 million people per annum

more people = more food = more fertiliser = more potash



Potash comes in a number of types – differentiated by chemistry



Source: UN FAO, CRU, BMO Capital Markets

Potash Type	US\$/tonne ¹	Nutrients	Uses
Potassium Chloride (MOP)	310 ²	Potassium	Staples – wheat, corn, chloride tolerant crops
Potassium chloride-magnesium sulphate (MOP-MS)		Potassium, magnesium, sulphur	Sugar beet, maize, oilseed rape
Sulphate of Potash Magnesia	450	Potassium, sulphur and magnesium	Specialty fertiliser, high value crops, limited production centres
Sulphate of Potash	730 ³ 534 ⁴ 940 ⁵	Potassium and sulphur	Chloride intolerant and specialty crops such as fruits, vegetables, nuts, beans and coffee
Potassium Nitrate	970	Potassium and nitrogen	Chloride sensitive crops that require additional nitrogen
Total potash market approx. 64 million tonnes			

¹Source: Greenmarkets, Feb. 2015, Compass Minerals quarterly report

² CFR Europe

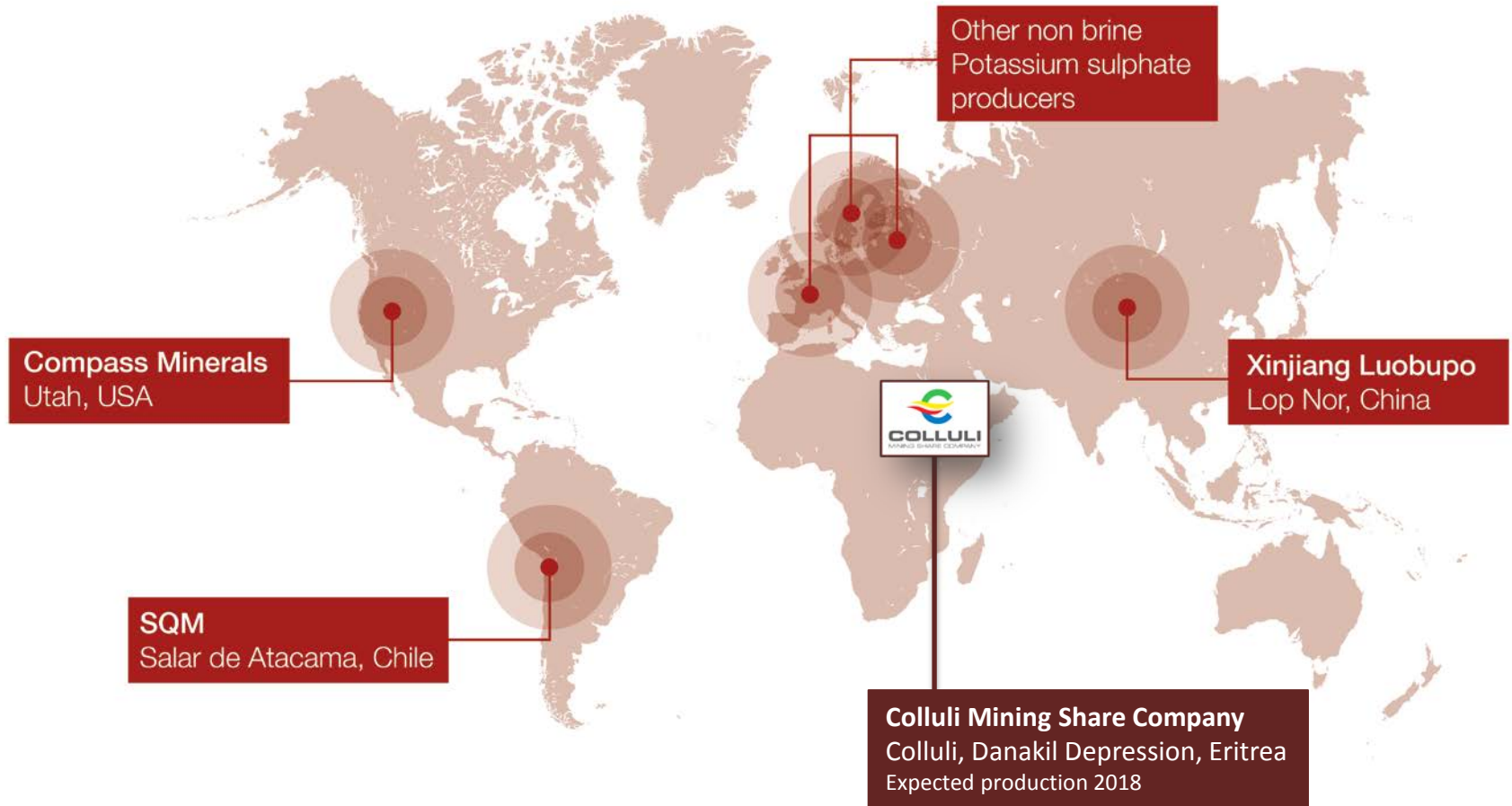
³ West Coast US

⁴ NW Europe FOB

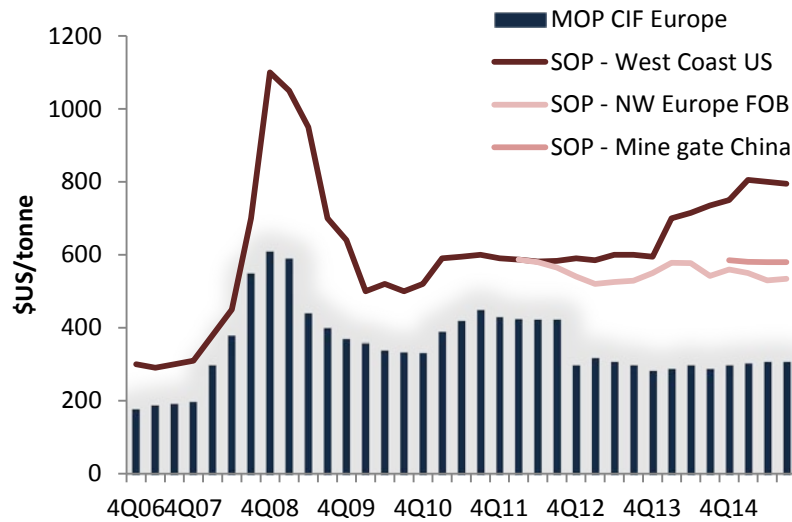
⁵ Eastern Canada



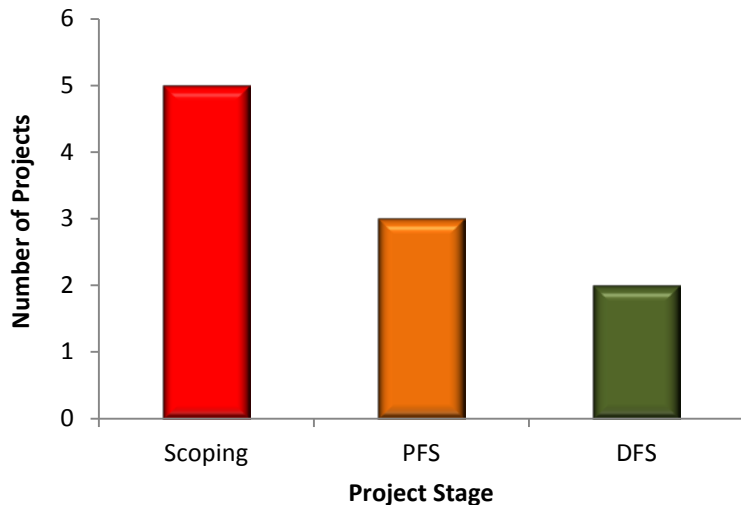
SOP – premium product with limited primary production centres



Supply constrained market with limited greenfield developments



Source: Green markets, CRU International, Integer Research, Compass Minerals Quarterly reports



Source: Company Announcements

SOP Prices Up

- While MOP prices have dropped since 2010, SOP prices in the US continue to climb and Europe remains stable at higher than historical premiums
- Since 2006, MOP prices have increased 72% while SOP prices have increased by **165%**

Limited advanced projects (PFS or DFS)

- Only two greenfield SOP developments with completed DFS
- Only three greenfield projects with completed PFS (including Colluli)



Colluli Pre-feasibility study results - Project Highlights

- **Globally significant** resource
- **Highly favourable** economics
- **Stable and maturing** mining jurisdiction
- **Simple project development** focussing on single potassium sulphate (SOP) product for early project phases
- **Lowest capital intensity** of advanced SOP projects globally
- **Bottom quartile operating costs** for the production of potassium sulphate (SOP)
- **Modular development** approach underpinned by massive 1.289 billion tonne high grade resource close to surface
- **Significant project upside** with clear economies of scale and product diversification
- **Unrivalled coastal access** with only 75km to the Red Sea
- **Aligned and committed joint venture partners** in the 50:50 JV (Colluli Mining Share Company) between STB and the Eritrean National Mining Company ENAMCO



PFS – Economic Snapshot

	Phase I	Phase II	Phase III and beyond
Expected Module Capacity (tpa)	425,000	+ 425,000	Project will grow with market over time and diversify product mix.
Development Capital (US\$m)	442	282 ²	
Average Mine Gate Cash Costs (US\$/t SOP)	162	141	
¹ Project NPV _{10%} (US\$m)	462	846	
Project IRR (%)	22.3	24.7	
STB NPV _{10%} (US\$m)	206	397	
STB IRR (%)	22.3	25.9	
Undiscounted cumulative cash flow (US\$m)	2,645	5,134	
Production Commences	Q3 2018	Q3 2023	
Expected mine life (years - based on Measured and Indicated)	520	260	

Phase I has been modelled as a standalone project and is an attractive investment in itself.

Phase II calculated with the second module commencing in 2023, with volumes in addition to Phase I.

¹Modelled at long term SOP price of US\$588/tonne

Note: PFS for EPM Mining modelled US\$716/tonne SOP [Source: EPM Mining N43-101 PFS report]

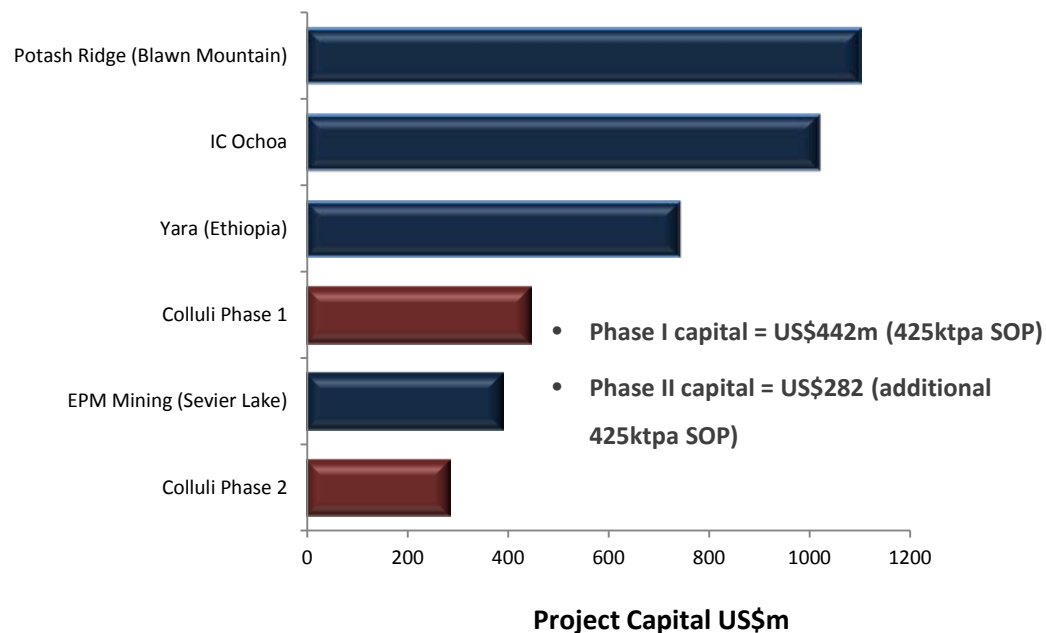
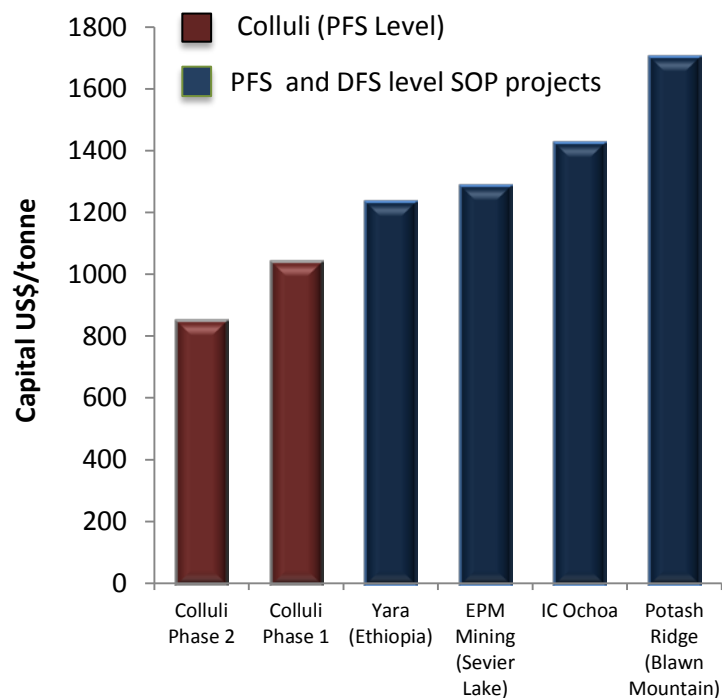
Note: DFS for IC Ochoa modelled at \$618/tonne SOP [Source: IC Ochoa N43-101 Feasibility report]

Note: Colluli Project NPV10% @ US\$700/tonne = US\$689m Phase I (28.3% IRR) and US\$1,205m (30.5% IRR) Phase II

² Incremental additional capital



Lowest capital intensity and buy-in cost of advanced SOP projects



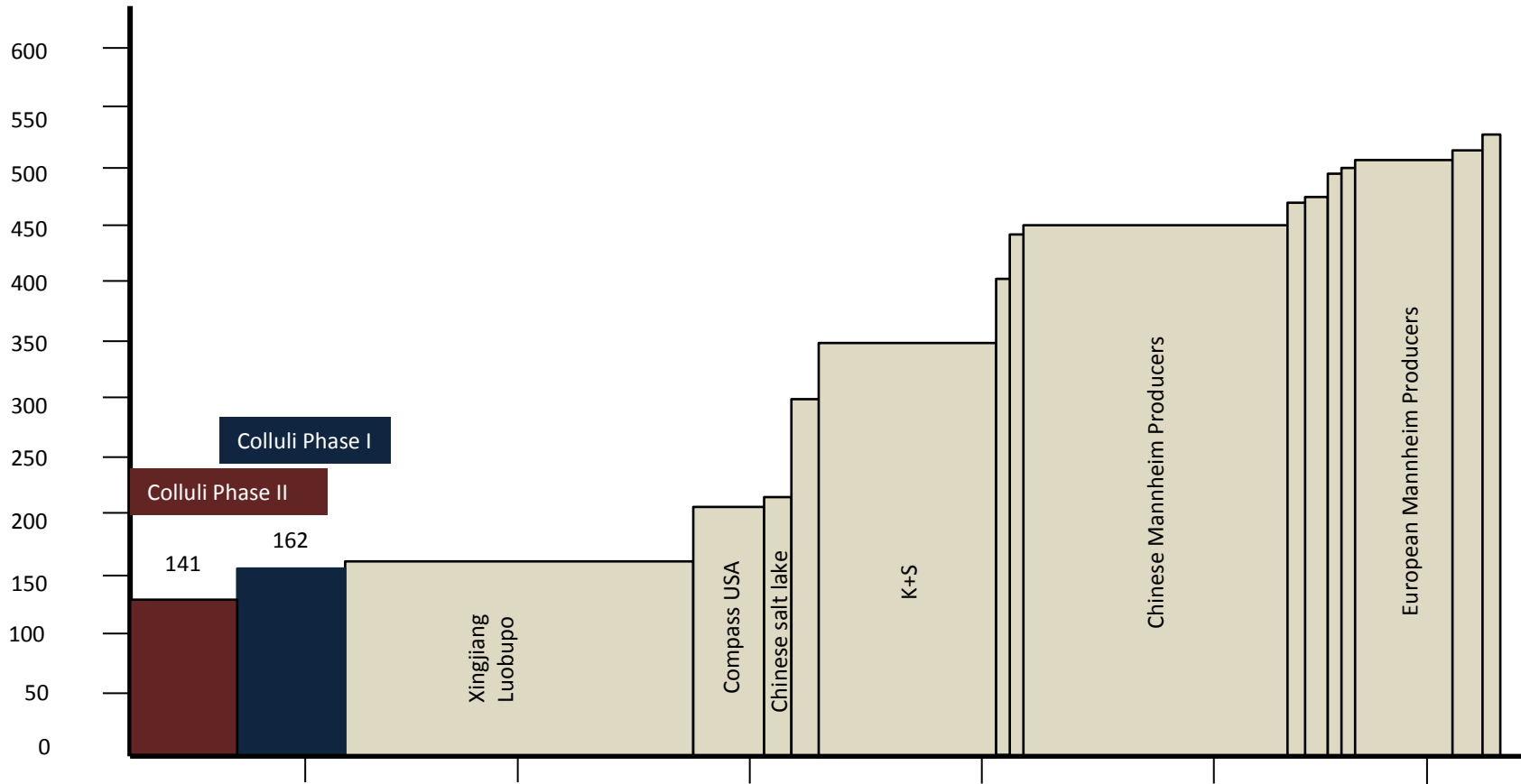
Colluli's Distinct Capital Advantages

- **Reduced solar pond size relative to brine and solution mining:** due to salts starting in solid form
- **Reduced crushing infrastructure in processing:** due to crushing capability of surface miners
- **High yield conversion:** due to salt combination and salts in solid form



PFS shows Colluli expected in bottom quartile mine gate cash costs

Ex-works cash cost (\$US/tonne)

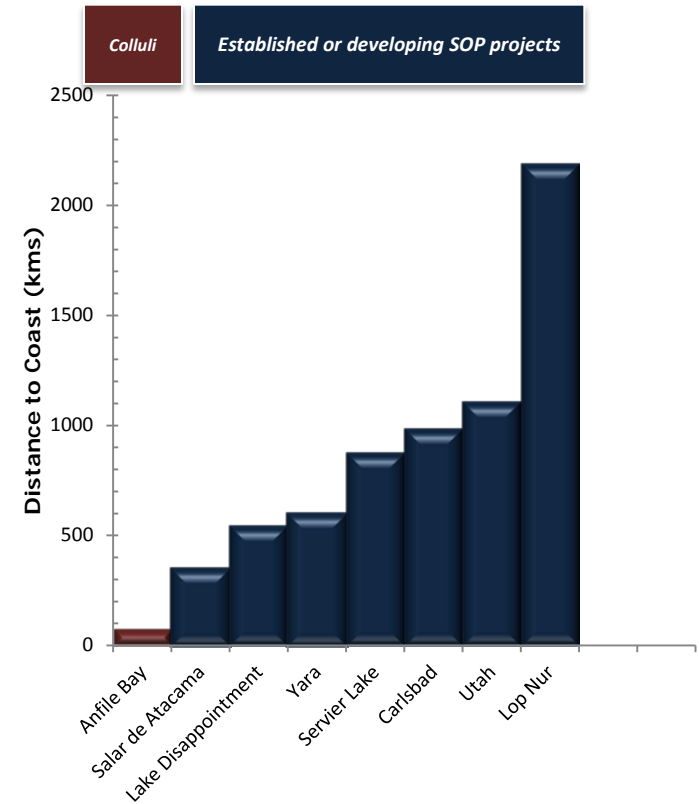
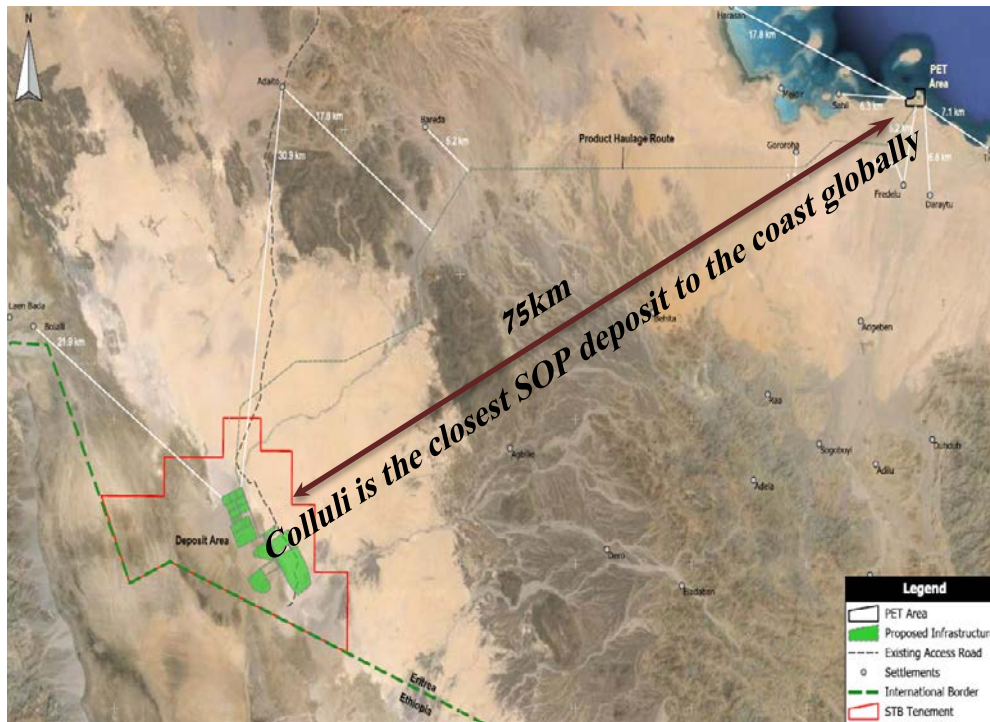


Source: CRU Research, EPM Mining presentation 2014, Company websites, Integer Research

Note: Where costs were not known, estimates were applied



Unrivalled proximity to coast

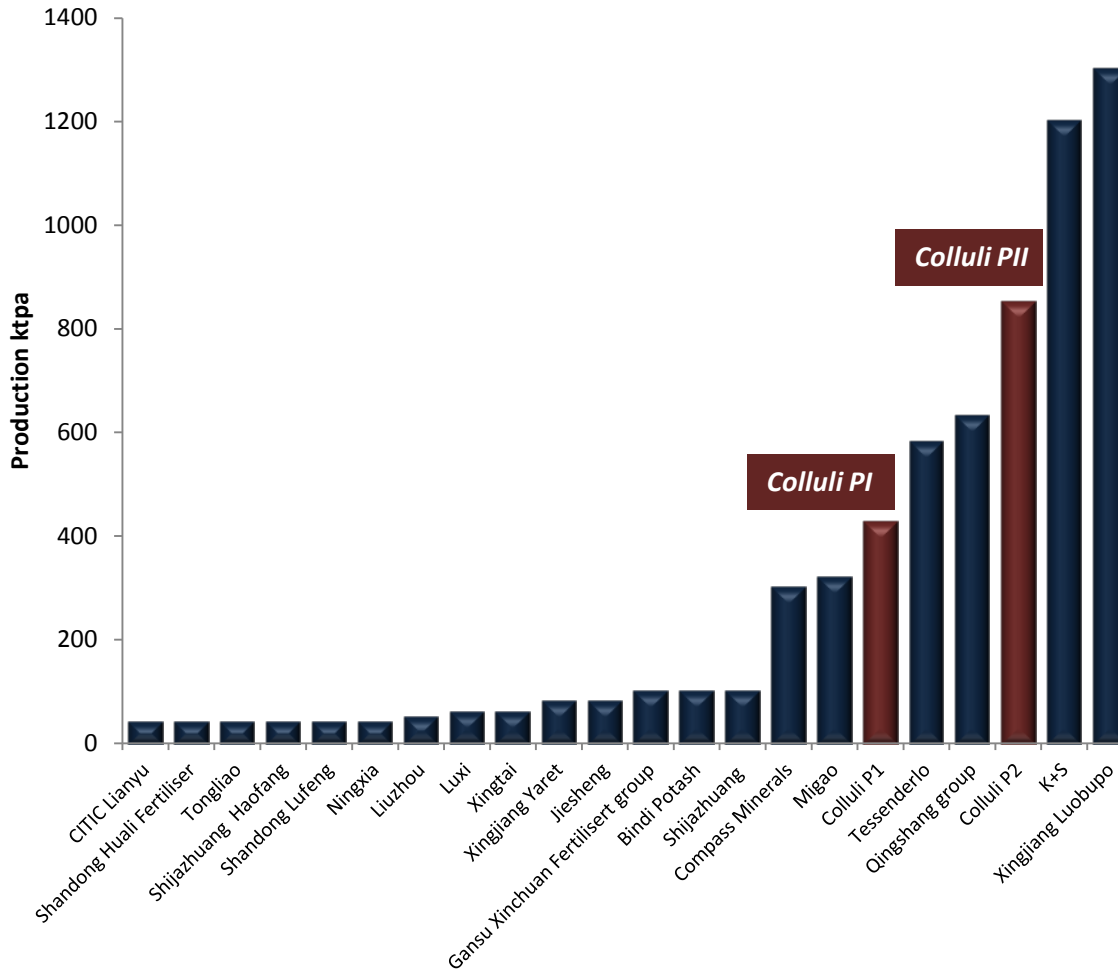


- Location is significantly closer to port than potassium sulphate peers
- Trucking is a low cost option to access port
- Deepwater access at Anfile Bay suitable for loading vessels up to Panamax size



Phase II will make Colluli the third largest SOP producer globally

SOP Annual Production Rate by Producer



Global SOP Market
approx. 6 million tonnes.

Only two producers above 1Mtpa.

Colluli Phase I: Places Colluli in top 10 producers globally and allows non disruptive market entry.

Colluli Phase II: Will place Colluli in the top 3 producers globally.

First module = non disruptive market entry point



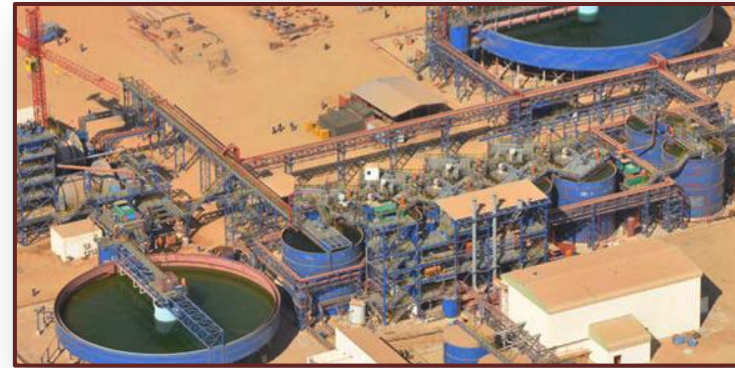
Eritrea – maturing mining industry, stable jurisdiction

1. Stable jurisdiction

- 24 years of independence
- Stable government

2. Maturing Mining Industry

- ✓ Bisha mine (Nevsun:ENAMCO) in production since 2010
 - Third capacity expansion underway
- ✓ Zara mine (previous owner Chalice Gold) currently commissioning
- ✓ Asmara project (Sunridge Gold:ENAMCO) completed DFS
- ✓ Colluli project (South Boulder Mines:ENAMCO) completed PFS



Bisha Mine



Zara Mine



DFS Underway

Milestones	2014E			2015E				2016E			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Metallurgical Testwork	█										
Preliminary Feasibility Study	█										
Finalise the resource	█										
Pilot tests	█				█						
Definitive Feasibility Study				█	█	█					
Social Environmental Impact Assessment	█				█	█					
Mining License Application							█	█	█		
Funding						█	█	█	█		
Detailed Engineering									█	█	█
Phase 1 Construction											█



Summary

- **Colluli is set to become an agrichemical production facility of global significance**
- **Simple project development** focussing on single potassium sulphate (SOP) product for Phase I and Phase II modules. Each module expected to produce 425ktpa
- **Lowest capital intensity** of advanced SOP projects
- **Bottom quartile operating costs** for the production of potassium sulphate (SOP)
- **Modular development approach** underpinned by massive 1.289 billion tonne high grade resource close to surface
- **Significant project upside** with clear economies of scale and product diversification
- **Social and environmental baseline** work well advanced



Why STB?

- **STB owns 50% of a world class resource that supports decades of growth**
- **Highly experienced and capable board and management team focussed on project delivery**
- **Joint Venture with Eritrean National Mining Company - aligned and committed business partners**
- **Only one of three SOP projects at PFS level globally**
- **Modular approach de-risks project**
- **Simple, proven mineral processing units**
- **Unrivalled access to coast with simple logistics**
- **Highly favourable geographic location relative to key growth markets**
- **Positive social impact for local communities**
- **No communities within tenements**
- **Substantial upside to develop a multi commodity agrichemical business**





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Thank you

Our vision is to bring the Colluli project into production using the principles of risk management, resource utilisation and modularity, using the starting module as a growth platform to develop the resource to its full potential.



Experienced board and management



Seamus Cornelius, Non Executive Chairman

Mr Cornelius has 21 years of corporate experience in both legal and commercial negotiations. He has been based in Shanghai and Beijing since 1993, where he has been living and working as a corporate lawyer. From 2000 to 2011 Mr Cornelius was an international partner with one of Australia's leading law firms, specialising in cross border investments in the energy and resource sectors.



Paul Donaldson, CEO and Managing Director

Mr Donaldson was appointed to the role of Chief Executive Officer in February 2013. He joins South Boulder Mines from a series of senior management roles with BHP Billiton. Mr Donaldson has experience in large scale open cut mine management, supply chain logistics, mineral processing, business improvement and marketing.



Tony, Kiernan, Non Executive Director

Mr Kiernan was previously a commercial lawyer and is currently Chairman of the Australian iron ore producer BC Iron Ltd (ASX:BCI) and a non-executive director of several listed mining companies including Chalice Gold Mines Ltd (ASX: CHN), which has been operating in Eritrea since 2009.



Liam Cornelius, Non Executive Director

Mr Cornelius graduated from Curtin University of Technology with a BAppSc in Geology. He has been involved in the exploration industry within Australia and Africa for 18 years. As a founding member of South Boulder Mines, Mr Cornelius has played a key role in outlining areas of interest for the company.



John Fitzgerald, Non Executive Director

Mr Fitzgerald joined the board in February 2015, and has previously held positions at NM Rothschild and Sons, Investec Bank Australia, Commonwealth Bank and HSBC Precious Metals. He is the Managing Director of Optimum Capital Pty Ltd, a corporate debt and advisory business focussed on the mining sector. Mr. Fitzgerald is also a Non-Executive Director of Northern Star Resources Limited and Chairman of Mungana Goldmines Limited. Mr Fitzgerald is a Chartered Accountant, a Fellow of FINSIA and a member of the Australian Institute of Company Directors.



James Durrant, Project Manager

Mr. Durrant joined South Boulder Mines after a series of operational roles within BHP Billiton. With tertiary qualifications in both mechanical and mining engineering, Mr. Durrant brings project management, organisational design and operational management of large scale open cut mines skills to the organisation.



Zeray Leake, Country Manager

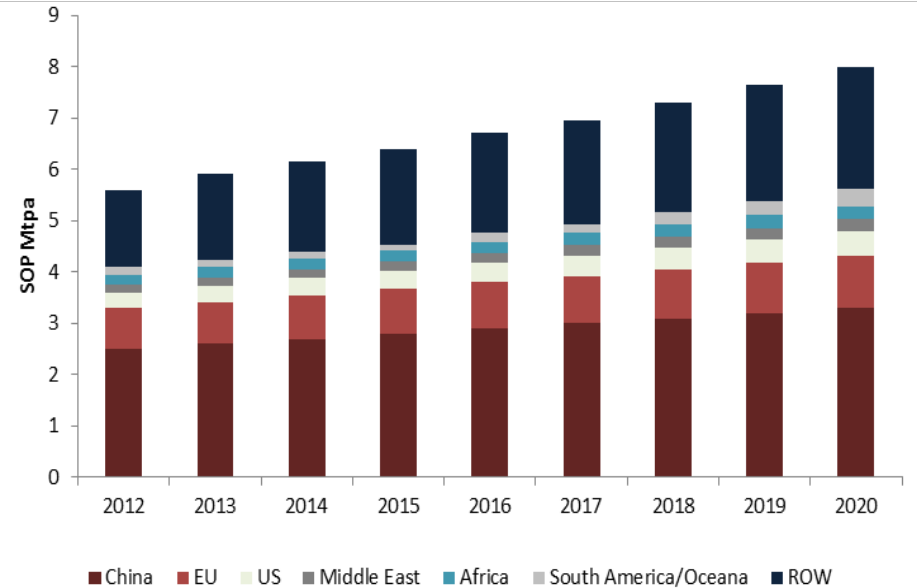
Mr Leake is a Geologist with over 12 years experience in the development and exploration of potash, gold, base metals and industrial minerals. Mr Leake previously worked for the Geological Survey of Eritrea.



SOP - solid growth fundamentals and limited new projects

Fertiliser growth underpinned by:

- Growing population : +80 million people per year
- Reduction in arable land : Increased crop yield per acre required
- Changing dietary preferences: Developing economies changing to higher protein diets and increased fruit and vegetable intake



4% CAGR and approx. 2 million tonnes of SOP growth projected over next decade

Source: Parthenon Analysis, EPM Mining

Limited greenfield projects

- Potassium sulphate is geologically scarce
- Only one greenfield project at DFS completion stage
- High energy inputs
- DFS Projects = 1
- PFS Projects = 2



SOP - A distinct and valuable potash product

Especially valued for chloride sensitive crops, SOP improves the yields of:

- Fruits
- Vegetables
- Nuts
- Tea
- Coffee
- Beans



SOP is also highly valued in arid regions with low rainfall, and salinity affected soils



Potash Basics

Potash comes in a variety of types – differentiated by chemistry

Availability of economic resources varies with potash type

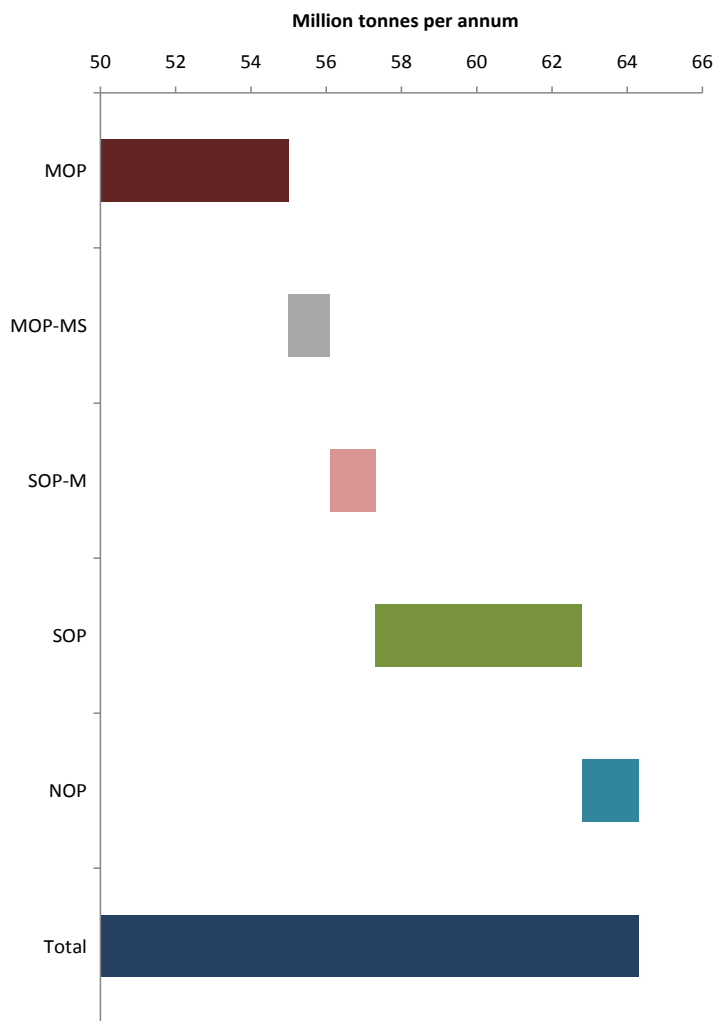
Potash prices are fundamentally different

Potash type	Abbreviated name	Typical sale price (US\$/t)	Key Primary Production Centres	Abundance of resources suitable for exploitation
Potassium chloride	MOP	310	Canada, Russia, Middle East, China	Very high
Potassium magnesium sulphate	SOP-M	450	United states	Very low
Potassium Sulphate	SOP	750	United states, Chile, China	Very low
Potassium Nitrate	NOP	970	Chile, China, Middle East	Very Low

Source: Green markets, CRU International, Integer Research



Colluli's salt suite allows longer term product diversification



Source: UN FAO, CRU, BMO Capital Markets

Potential product from Colluli	Potash Type	Nutrients	Uses
✓	Potassium Chloride (MOP)	Potassium	Staples – wheat, corn, chloride tolerant crops
✓	Potassium chloride-magnesium sulphate (MOP-MS)	Potassium, magnesium, sulphur	Sugar beet, maize, oilseed rape
✓	Sulphate of Potash Magnesia	Potassium, sulphur and magnesium	Specialty fertiliser, high value crops, limited production centres
✓	Sulphate of Potash	Potassium and sulphur	Chloride intolerant and specialty crops such as fruits, vegetables, nuts, beans and coffee
	Potassium Nitrate	Potassium and nitrogen	Chloride sensitive crops that require additional nitrogen
Total potash market approx. 64 million tonnes			

¹Source: Greenmarkets, Feb. 2015, Compass Minerals quarterly report

² CFR Europe

³ West Coast US

⁴ NW Europe FOB

⁵ Eastern Canada



Modular growth underpinned by 1.289Bt, JORC compliant, high grade resource

Over 1 billion tonnes of potassium bearing salts – all potassium salts in the Colluli resource are suitable for the production of potash fertilisers.

Shallow mineralisation supports Colluli as open pit – a proven, safer mining method, easier to expand and better overall resource recovery than underground.

Danakil basin is an emerging potash province – over 4 billion tonnes of potassium bearing salts identified to date, and one of **only three** major deposits globally containing kainite salt (key salt for SOP production) in solid form.

Colluli at a Glance	
Location	South Eritrea
Product	Sulphate of Potash
Resource¹	Measured: 303Mt Indicated: 951Mt Inferred: 35Mt <u>Total: 1289Mt</u>
Potassium Bearing Salts	Sylvinite: 265Mt Carnallite: 398Mt Kainite: 626Mt
Process	Flotation/Solar Evaporation
Stage	DFS level testwork program underway

¹Refer to STB ASX announcement 25th February, 2015



Potential project upside

Markets for these products are well established.

Potential Markets for Various Resource Mineralisation

Mineral Present at Colluli	Colluli Resource ¹	Global Market Context
rock salt (NaCl)	+ 650Mt	300Mtpa global salt market
halite (NaCl)		
bischofite (MgCl ₂)	+200Mt	6 – 7Mtpa global market
anhydrite	Avg 4% (~40Mt)	187Mtpa Gypsum market
kieserite (MgSO ₄)	40Mt	Established fertiliser segment

¹ Exploration targets



Clear economies of scale and significant upside

From Phase I to Phase II:

- **46% reduction in G and A:** due to fixed senior management structure across both modules
- **14% reduction in mining costs:** fixed cost dilution and improved equipment utilisation
- **11% reduction in OPEX overall**

	Phase I	Phase II
Project Production Capacity (tpa)	425,000	850,000 (+425kt)
Breakdown of operating costs (\$US/t SOP)		
Mining costs	82.71	71.53
Processing Plant	58.34	57.89
General and Administration	20.92	11.37
Mine gate cash costs	161.97	140.79
Trucking to port	6.49	6.48
Shiploading	20.93	20.87
Total Operating Costs	189.39	168.14



Modular approach mitigates risks – safety, capital, process, market

Safety:

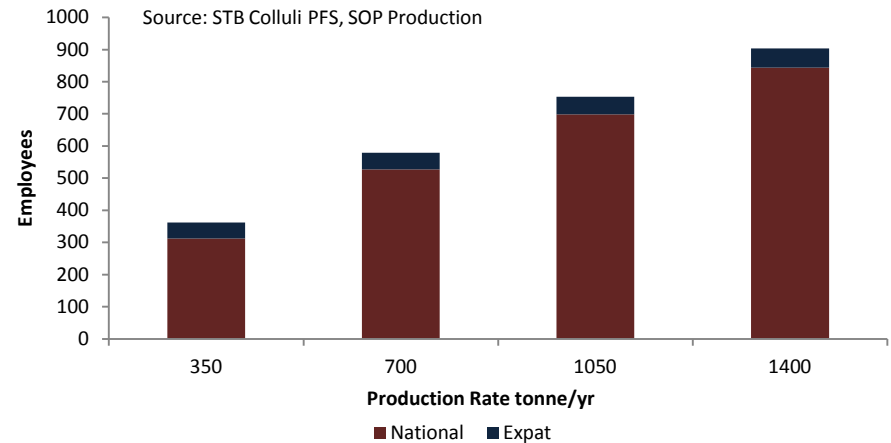
- Managing workforce size, skills and training in developing mining jurisdiction
- Avoiding competition for limited skills within developing mining industry
- Developing capability at a manageable rate
- Managing span of control

Capital/Commercial:

- Analysis of Australian mining projects shows larger % cost increases with increasing project size
- Highest level of confidence in the bracket with the largest number of projects (\$100m - \$500m)

Process:

- Greenfield developments rely on data acquisition and metallurgical test programs for process design. While this proves and de-risks the process, operational data and process understanding are core elements of process optimisation
- Module designs can be optimised with the combination of data, plant performance, improved understanding of raw material and processing behaviour



Value of Mining Projects Completed (\$m)	20 – 100	101 - 500	501 - 1000	+1000
Projects	43	54	17	27
Average cost change	2.4%	-3.8%	4.0%	14.6%

Source: Deloitte Access Economics, March 2014



Social and Environmental baselines well progressed

- Community engagement well advanced
- Two tranches of environmental baseline assessments submitted to the Ministry of Environment
- Feedback received from first submission
- Oceanography base studies well progressed
- Final tranche due to be submitted in Q2 2015
- Colluli exploration camp managed by closest community as needed

