

#### DANAKALI

create. nurture. grow.

#### **Colluli – Strength to Strength**

Colluli project update Paul Donaldson, Managing Director January 2017



#### **Forward looking statements and disclaimer**



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Factors that could cause actual results to differ materially from those in forward-looking statements include market prices of potash and, exploitation and exploration successes, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, as well as those factors disclosed in the Company's filed documents.

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Mineral Resource, Ore Reserve and financial assumptions made in this presentation are consistent with assumptions detailed in the Company's ASX announcements dated 25 February 2015, 4 March 2015, 19 May 2015, 23 September 2015, 30 November 2015 and 15 August 2016 which continue to apply and have not materially changed. The Company is not aware of any new information or data that materially affects assumptions made.

#### **Corporate Snapshot**



Financial information (As of 31 Dec. 2016)

A\$0.48 224.6m
224.6m
A\$107.8m
A\$10.9m
Nil
A\$96.9m

#### Share price performance (YTD)



Top shareholders	Source: IRESS
Well Efficient Hong Kong private investor	13.4%
JP Morgan (UK)	9.0%
Danakali Board members	12.2%

#### The most advanced greenfield SOP project globally



	Milestone	Outcome
il use onl	DFS complete <u>Unrivalled economics</u> <u>relative to all</u> <u>advanced SOP projects</u>	<ul> <li>Simple, commercially proven process</li> <li>Independent technical review of process design, mass balances, evaporation trials and metallurgical test program completed</li> <li>Low development capital</li> <li>Industry leading capital intensity</li> <li>Bottom quartile operating cost curve position</li> <li>World class resource with over 1bt ore reserve</li> </ul>
	Offtake MOUs signed	<ul> <li>✓ MOU's signed for 800kt per annum of SOP<sup>1</sup></li> <li>✓ Offtake discussions progressing towards Heads of Agreement</li> </ul>
of ders	Front end engineering and design bidding complete	<ul> <li>Site visits completed</li> <li>FEED bidding process complete</li> <li>Fluor appointed as FEED lead</li> <li>Global Potash Solutions, Knight Piésold and Elemental Engineering appointed to FEED team</li> <li>Kick off commenced with optimisation phase</li> </ul>
	Mining agreement and license award nearing completion	<ul> <li>Ministry of Energy and Mines review complete</li> <li>Social and Environmental Impact Assessment (SEIA) approved</li> <li>Mining agreement nearing completion for sign off</li> </ul>



**"Danakali**, which is developing a project in Eritrea, has perhaps made the most progress of all greenfield SOP projects over the last 12 months."

- CRU Consulting, October 2016, Potash Update



# Colluli is a world class sulphate of potash (SOP) project with unrivalled resource, economics and diversification potential

World class resource <sup>1</sup>	<ul><li>1.3 billion tonne resource</li><li>1.1 billion tonne ore reserve</li><li>&gt; 200 year mine life</li></ul>
Positively unique	Right combination of potassium salts for low energy input, high yield conversion to SOP Salts extracted in solid form – eliminating capital intensive evaporation ponds, and providing consistent, predicable, reliable, non weather dependent production
Unrivalled access to coast and global markets	Located at the epicentre of booming population growth Closest SOP deposit to a coastline and established export infrastructure globally
Exceptional feed grade	25 times more potassium in ore feed than brines <sup>2</sup> and vastly superior waste to ore ratios
Exceptional economics	Industry leading capital intensity Bottom quartile operating cost curve position The most attractive advanced stage pre-production SOP project globally
Unrivalled growth and diversification potential	Unique capability to produce diverse range of potash types Appreciable amounts of kieserite, gypsum, magnesium chloride and sodium chloride
Right team	Highly experienced team with an excellent track record of project delivery, technical expertise and operational excellence

1 Danakali DFS 30 November 2015

2 Calculated from Colluli resource data and published brine compositions

#### **SOP is the PREMIUM POTASH**



#### SOP IS A HIGH VALUE, CHLORIDE FREE SOURCE OF POTASSIUM

#### **Premium Price**

- Sustained price premium of over 100% relative to MOP<sup>1</sup>
- Secondary production provides high margins for primary producers



#### **Essential Macro-nutrient**

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- Potassium is an essential, non-substitutable nutrient
- SOP critical for high value, chloride intolerant crops such as fruits, nuts and vegetables
- SOP also provides sulphur

#### **Increasing Importance**

- Demographic shift to high value specialty crops
- Environmentally friendly no chlorine, low salinity index
- Highly suited to increased focus on improved water efficiency in agricultural sector

#### **Limited supply**

- Limited economically exploitable primary resources
- Over 50% of world's supply from expensive secondary processing of MOP (KCI)<sup>2</sup>

Source: Greenmarkets

MOP prices based on FOB Vancouver prices, SOP prices based on FOB Utah prices

2 CRU

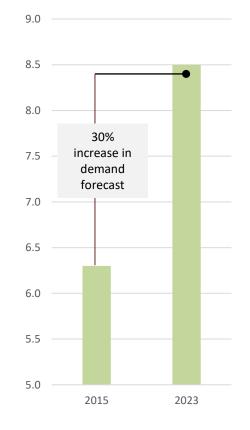
# SOP demand will increase by over 30% over the next decade



### SOP IS A MULTI-NUTRIENT FERTILISER ESSENTIAL FOR HIGH VALUE, CHLORIDE INTOLERANT CROPS

- A significant increase in global SOP consumption is forecast <sup>1</sup>
- 33% increase in demand for high value fruit and vegetables till 2050<sup>3</sup>
- Colluli is well positioned as an advanced stage project to take advantage of global growth







Orange without SOP<sup>2</sup>



Orange with SOP<sup>2</sup>

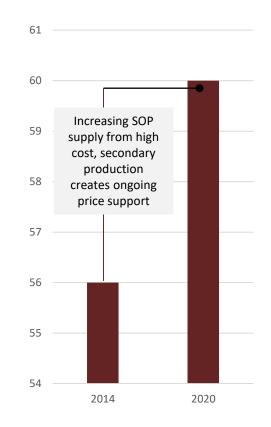
#### **Over 60% of SOP supply will come from high cost secondary production by 2020**



#### LACK OF ATTRACTIVE PRIMARY PRODUCTION PROJECTS REQUIRES INCREASED HIGH COST SUPPLY TO MEET DEMAND

- Lack of attractive primary SOP projects requires additional secondary production to meet growing demand - high cost secondary production requires thermal conversion of sulphuric acid and potassium chloride to produce sulphate of potash (SOP)
- Acid management, storage and disposal cause ongoing challenges for secondary producers, adding to conversion costs
- Secondary producers create a high price floor for primary producers who will continue to enjoy high margins





# **Colluli – a positively unique resource and the most attractive greenfield primary production SOP project**



- There is only one Colluli !
- Shallow mineralisation allows open cut mining and extraction of salts in solid form.
  - A proven, safer method than underground mining
  - Massive conversion of resource to reserve (over 85%)
  - Significant footprint size, grade and production reliability benefits over brines
  - Lower complexity than brine chemistry management
  - Low incremental growth capital
  - Monetisation of other salts extracted as waste
- Massive 1.1 billion tonne ore reserve
- The most favourable combination of potassium bearing salts suitable for production of SOP, SOP-M and MOP
- Unrivalled diversification potential appreciable amounts of gypsum, kieserite, rock salt and magnesium chloride
- Access to export infrastructure
- On the doorstep of critical markets

#### Colluli sits in the world's largest unexploited potash basin





## Large, low cost, long life resource close to established infrastructure



Large, long life resource <sup>1</sup>	<ul><li>&gt; 1.3 Bt resource</li><li>&gt; 1.1 Bt ore reserve</li></ul>
Easily accessible	No vegetation
	No communities within tenements
	Mineralisation starts at 16m

Close proximity to established infrastructure<sup>2</sup>



Bitumised and all weather road runs to within 40km of Colluli site

#### Well established export facility<sup>3</sup>



#### Port of Massawa

6 berths

Bulk and container shipping capability Storage area allocated for Colluli product

1 Photo of Colluli site

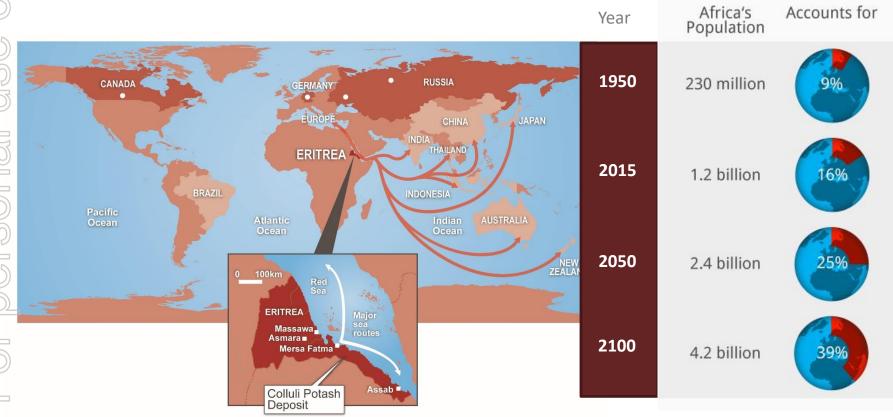
- 2 Road from Massawa towards Colluli
- 3 Massawa Port

#### East African location is geographically favourable for current and future key markets





#### BY 2050 25% OF THE WORLDS POPULATION WILL BE AFRICAN<sup>1</sup>



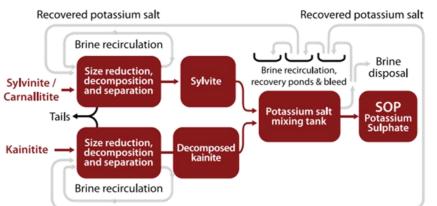
#### Simple, energy efficient, commercially proven technology WITH THE BEST COMBINATION OF SALTS



# 

#### PRODUCTION OF SOP FROM COLLULI SALTS OCCURS WITH SIMPLE PROCESSES INCLUDING FLOTATION, MIXING AND DRYING

#### Colluli process design



#### <u>Simple processing</u> – Crush – Float – Mix – Dry - Truck

#### Colluli contains <u>the right combination of potassium salts</u> for ambient temperature conversion to SOP

- The combination of sylvite and kainite is ideal for ambient temperature, <u>high yiel</u>d conversion to SOP
- No thermal decomposition required
- Heated brines typically achieve potassium yield 10% to 15% lower than ambient conversion

#### Colluli plant images



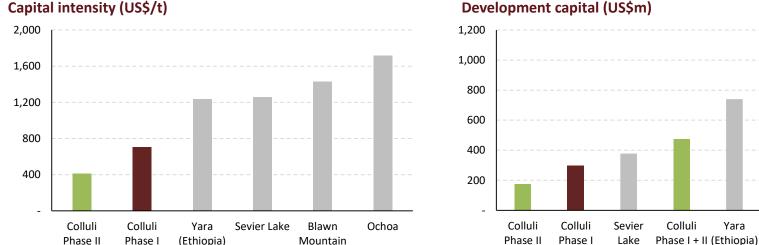


#### **Industry leading capital intensity**



#### **INDUSTRY LEADING CAPITAL INTENSITY AND LOW DEVELOPMENT CAPITAL RENDERS COLLULI HIGHLY FUNDABLE**

#### Capital intensity (US\$/t)



#### The Colluli resource is positively unique:

- Colluli has the right combination of potassium salts for low cost, high yield SOP production
- It is the shallowest evaporite deposit in the world making it amenable to open cut mining
- Extraction of salts in solid form negates the need for large evaporation ponds reducing capital intensity
- Mining and processing salts in solid form will result in **stable**, **consistent**, and **reliable production**

Yara

Ochoa

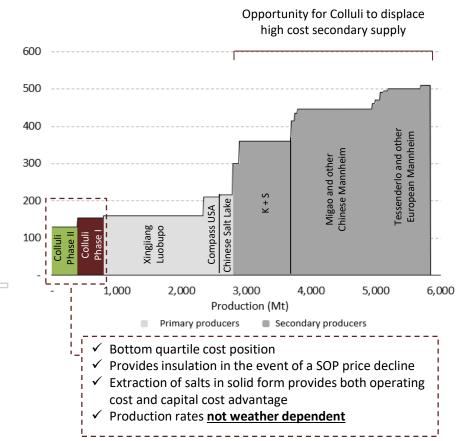
Blawn Mountain

# **Bottom quartile cost curve position will support significant product growth**



#### COST CURVE POSITION WILL PROVIDE COLLULI WITH INDUSTRY LEADING RETURNS THROUGHOUT THE COMMODITY CYCLE

Ex-works cash costs for SOP production (US\$/t)



- Over 50% of the worlds supply is produced using high cost secondary production
- By 2020 secondary production will represent over 60% of supply
- Low incremental growth capital, bottom quartile cost curve position, and massive ore reserve positions Colluli to become the most significant SOP producer globally
- Over 2 million tonnes of SOP growth in high cost production displacement alone

Source: CRU, Integer, Company Research

# Colluli is the ONLY primary resource that is capable of delivering SOP feed salts in solid form



# erson

#### EXTRACTION OF SALTS IN SOLID FORM PROVIDES A SIMPLE, HIGH YIELD PRODUCTION PATH TO SOP

#### • Simplicity

- Brine chemistry management is complex
- Colluli processing plant utilises simple, proven, mineral processing units
- Lower energy input
  - Sulphate rich brines typically require heating to
     <u>55°C</u> for thermal decomposition<sup>1,2</sup>
- Consistent, predictable feed grade
- Production rates not weather dependent
  - Production rates from brines directly proportional to weather conditions
- Smaller footprint
  - No pre-production ponds
- Higher potassium yields

2. Reward Minerals Presentation, 2013



<sup>1.</sup> Potash, Garret. P, pp441 – 445

#### **Advantages over brines are clear**





Photo: Colluli kainite core Colluli salts will be mined in solid form

- Nature has done the work at Colluli
- Salts are mined in solid form and available for immediate processing and provide immediate return on capital
- No large, capital intensive evaporation ponds
- Consistent, predictable feed.
- No hydrogeological risk and production rates not weather dependent



Photo: Trench excavation at Lake Wells <sup>1</sup> Significant trenching required to access low grade brines



Photo: Potassium brine, Lake Wells <sup>1</sup> Significant evaporation required to generate harvest salt

- Significant evaporation required to convert brine to harvest salt
- Production rates highly weather dependent
- Large, capital intensive evaporation ponds required
- Brine production dependent on hydrogeological characteristics of host material
- Large lag between capital investment and revenue generation
- High energy intensity to heat brines

1. Salt Lake Potash, January 2017



#### Unrivalled multi agri-commodity potential

МОР	SOP	SOP-M	Kieserite	Gypsum
<ul> <li>Improves yield for wide range of crops</li> <li>Most concentrated form of granular potassium</li> <li>Demand is elastic (easy to substitute)</li> <li>Market is well supplied by global potash majors</li> <li>Generally higher development costs</li> </ul>	<ul> <li>Danakali's key focus</li> <li>Improves yield of high value crops</li> <li>Suitable for chloride intolerant crops</li> <li>Demand is inelastic (not as easy to substitute, premium product leads to sticky demand)</li> <li>Global supply shortage of primary resources</li> <li>Sulphur is a key nutrient</li> <li>Fewer natural sources</li> <li>Higher margin</li> </ul>	<ul> <li>Demonstrated production from Colluli</li> <li>Limited supply and carries a price premium</li> <li>High grade, chloride free premium fertiliser</li> <li>Multi-nutrient fertiliser suitable for crops where three major nutrients are required</li> <li>SOP-M production ability confirms Colluli's multi agri- commodity business potential</li> </ul>	<ul> <li>An effective source of both magnesium and sulphur (magnesium sulphate)</li> <li>Suitable for all types of crops and use in any soil type</li> <li>Identified in potassium salt seams</li> <li>Volumes currently being evaluated</li> </ul> Additional agri-p	<ul> <li>Source of calcium and sulphur</li> <li>Improves acid soils and treats aluminium toxicity</li> <li>Improves soil structure and water infiltration</li> <li>Reduces run off erosion</li> <li>Detected within the Colluli tenements</li> </ul>
~85% of potash supply	~10% of potash supply	~3% of potash supply	L	

#### **Colluli continues to positively advance**



#### Front End Engineering and Design (FEED) Initiated

- Globally recognised, highly reputable, multi-national construction and engineering company, Fluor have been appointed to lead the FEED and optimisation process
- Global Potash Solutions, Knight Piésold and Elemental Engineering appointed to FEED team
- Optimisation workshops underway with focus on capital and operating cost reduction

#### **Offtake Discussions Well Progressed**

- MOUs now converting to Heads of Agreement
- High level commercial terms outlined
- Continued high level of interest in product offtake

#### Mining Agreement and Mining License

- DFS submitted to Ministry of Energy and Mines
- SEIA approved in December
- Mining agreement and license discussions have been progressing over the past few months and are nearing completion



**FLUOR**<sub>®</sub>



Knight Piésold



# Partnership with ENAMCO continues to be a key enabler for the project development



#### DNK AND ENAMCO ARE ADVANCING A WORLD CLASS POTASH PROJECT

#### Government support and strategic alliance

- Eritrea is a stable jurisdiction with a rapidly emerging mining industry.
- Danakali has a strong, effective working relationship with the Government through its joint venture.
- Agreement with the Eritrean National Mining Corporation (ENAMCO).
  - ENAMCO and Danakali each hold a 50% ownership in the Colluli Mining Share Company.
  - Project Development Costs for initial development will be funded by up to 70% debt and 30% equity.
  - The CMSC board was established following the incorporation of CMSC in March 2014. The board is overseeing the project development.
  - CMSC has a board of 5, with 3 members from Danakali and 2 from ENAMCO.

The structure allows Government direct insight into the mining industry, which is an important part of Eritrea's development.



#### Business can be done in Eritrea Multiple Large Scale Success Stories



#### THERE ARE MULTIPLE HIGH PROFILE EXAMPLE OF MINING INVESTMENT IN ERITREA

#### Eritrean mining background

- Nevsun Resources (TSX:NSU) is a major
   Eritrean-focused mining company
  - JV company formed with ENACMO and now operates Bisha copper mine
  - Successful modular JV development with ENAMCO paves the way for Colluli JV
  - Significant shareholders in Nevsun are globally recognised investors who have demonstrated comfort with investment in Eritrea
- Purchase of 60% of Asmara (copper, zinc, gold) by Chinese investor for C\$85m
- Joint venture agreement and relationship with ENAMCO is a key enabler of project success

#### Source: Nevsun Resources August 2015 corporate presentation, Bloomberg, company websites

#### **Major Eritrean mining developments**

**Bisha** Undergoing third expansion





Shareholders Blackrock Vanguard Franklin Templeton

Zara Commissioned and producing



Asmara 60% recently acquired by a Chinese investor



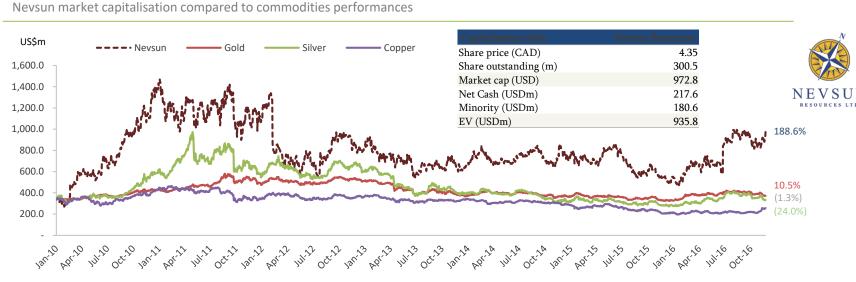
#### Supportive laws for mining investment

- A stable tax regime, with corporate tax rate of 38%
- Accelerated depreciation straight line over 4 years
- Generous reinvestment deduction (5% gross income)
- 10 year carrying forward of losses
- 0.5% import duty on mining inputs
- Simple "one stop" licensing system
- ...and there have been no changes to mining legislation in Eritrea

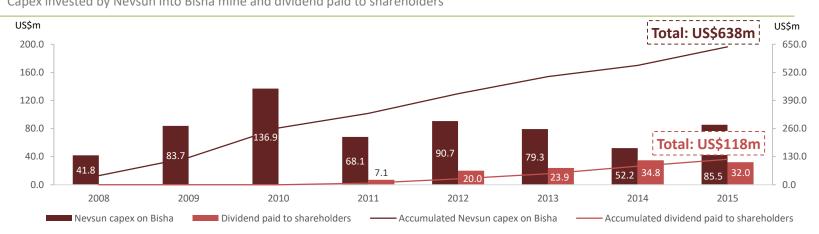
# Nevsun Resources – Case studyCumulative Capex Spend> US\$600mShareholder dividend> US\$100m



ersonal



Capex invested by Nevsun into Bisha mine and dividend paid to shareholders



Source: Company filings and S&P Capital IQ as of 23 November 2016 Note: All prices rebased to Nevsun market cap

#### Eritrea – Safe, stable and progressive



#### DANAKALI HAS BEEN OPERATING IN ERITREA SINCE 2009 AND HAS FOUND IT TO BE SAFE, STABLE AND DEVELOPMENT FOCUSED

#### **Positive Eritrean outlook**

#### The Danakali experience in Eritrea:

- Safe and friendly
- High degree of focus on health and education
- Development focussed with an emphasis on the agricultural, industrial and mining sectors
- Stable government
- Building up a track record of success in a maturing mining industry
- No evidence of corruption
- Gender equality

CMSC (ENAMCO and Danakali) are progressing a sustainable development framework that addresses the policy, management plans and compliance monitoring in key areas including:

- Human rights
- Anti-corruption
- Communities
- Health and safety

#### Tour of Eritrea cycling race (April 2016)



#### Development at the Massawa port



#### Long-term economic, social and community dividends





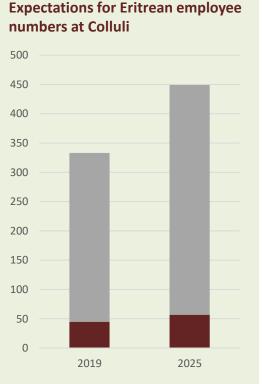
#### ENGAGEMENT WITH COMMUNITY AND KEY STAKEHOLDERS HAS GENERATED STRONG SUPPORT FOR COLLULI DEVELOPMENT











Regional employees National employees

Colluli will create over 300 permanent jobs for locals and Eritrean nationals by 2019, and over 450 by 2025

#### 2017 Plan



- Finalise the Mining Agreement and Mining License
- Complete front end engineering and optimisation
- Commence geotechnical work at recovery pond site
- Continue building organisational capability
- Finalise equipment lists and develop procurement plans and vendor packages
- Tender key contracts mining and power generation
- Finalise detailed construction schedule
- Commence organisational readiness planning
- Convert offtake heads of agreements to binding agreements
- Finalise project funding and commence construction



#### Colluli – a standout project



- SOP is a high quality, chloride free potash with limited economically exploitable primary resources
- Colluli is the most advanced stage primary SOP production project in the world
- Relative to all advanced stage SOP projects, Colluli is the most fundable and scalable with unrivalled resource, diversification and growth potential, and access to global markets
- The project is in close proximity to established infrastructure, and has standout economics relative to peers
- Colluli has progressed to front end engineering design, contract tendering and preliminary groundworks
- Mining Agreement and Mining License Award are nearing completion
- Offtake MOUs are progressing to high level commercial terms under Heads of Agreements



Danakali is an emerging multi agricommodity company developing a world class potash project





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#### Colluli - Positively Unique

#### **Competent persons statement**



#### **Resource statement**

The 2015 Colluli Potash Mineral Resource is reported according to the JORC Code and estimated at 1,289Mt @11% K2O Equiv. The Mineral Resource is classed as 303Mt @ 11% K2O Equiv Measured, 951Mt @ 11% K2O Equiv Indicated and 35Mt @ 10% K2O Equiv Inferred. The Competent Person for this estimate is Mr. Stephen Halabura, M. Sc., P. Geo., Fellow of Engineers Canada (Hon), Fellow of Geoscientists Canada, and a geologist with over 25 years' experience in the potash mining industry. Mr. Halabura is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan, a Recognised Professional Organisation (RPO) under the JORC Code and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code.

The 2015 Colluli Rock Salt Mineral Resource is reported according to the JORC Code and estimated at 347Mt @96.9% NaCl. The Mineral Resource is classed as 28Mt @ 97.2% NaCl Measured, 180Mt @ 96.6% NaCl Indicated and 139Mt @ 97.2% NaCl Inferred. The Competent Person for this estimate is Mr. John Tyrrell, a geologist with more than 25 years' experience in the field of Mineral Resource estimation. Mr Tyrrell is a member of the AusIMM, is a full time employee of AMC Consultants Pty Ltd and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code.

Mr. Tyrell & Mr. Halabura consent to the inclusion of information relating to the Mineral Resource Statements in the form and context in which they appear.

#### **Ore Reserve statement**

The November 2015 Colluli Ore Reserve is reported according to the JORC Code and estimated at 1,113Mt @10% K2O Equiv. The Ore Reserve is classed as 286Mt @ 11% K2O Equiv Proved and 827Mt @ 10% K2O Equiv Probable. The Competent Person for the estimate is Mr Mark Chesher, a mining engineer with more than 30 years' experience in the mining industry. Mr. Chesher is a Fellow of the AusIMM, a Chartered Professional, a full-time employee of AMC Consultants Pty Ltd, and has sufficient open pit mining activity experience relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the JORC Code. Mr Chesher consents to the inclusion of information relating to the Ore Reserve in the form and context in which it appears.

In reporting the Mineral Resources and Ore Reserves referred to in this public release, AMC Consultants Pty Ltd acted as an independent party, has no interest in the outcome of the Colluli Project and has no business relationship with Danakali Ltd other than undertaking those individual technical consulting assignments as engaged, and being paid according to standard per diem rates with reimbursement for out-of-pocket expenses. Therefore, AMC Consultants Pty Ltd and the Competent Persons believe that there is no conflict of interest in undertaking the assignments which are the subject of the statements.