



## Colluli expands premium potassium fertiliser product range

### Highlights

- **High grade, chloride free sulphate of potash magnesia (“SOP-M”)** generated from Colluli potassium salts
- SOP-M has **limited supply and carries a price premium** over the more common potash, potassium chloride (MOP)
- The premium SOP-M product is expected to **further improve the highly favourable economics** demonstrated in the recently announced Colluli DFS
- SOP-M is a **multi-nutrient fertiliser** containing potassium, sulphur and magnesium, and is used mainly for high value crops where all three nutrients are required
- SOP-M product affirms Colluli’s true **multi agribusiness potential**
- **Scoping study initiated** on SOP-M production from the second SOP module in the phased development

Danakali Limited (“**Danakali**”, ASX:DNK) is pleased to announce that it has produced high purity, chloride free SOP-M from the Colluli Potash Project (**Colluli**, or the Project). Colluli is 100% owned by the Colluli Mining Share Company (“**CMSC**”), which is a 50:50 joint venture between Danakali and the Eritrean National Mining Company (“**ENAMCO**”).

Samples were generated and analysed at the Saskatchewan Research Council (“**SRC**”) using salts from the Colluli resource, and have been prepared in standard, granular and soluble form. Compaction of the SOP-M product took place at Ludman Industries in the United States.

SOP-M has limited production centres globally and sells at a price premium to the more common potash type, potassium chloride (muriate of potash “**MOP**”). SOP-M contains potassium, sulphur, and magnesium, all of which play a key role in plant nutrition, and represents the second premium potash types from the Colluli resource.

Managing Director, Paul Donaldson said “*We are very excited by the SOP-M product and its market potential. This high quality multi-nutrient potash type is ideal for chloride intolerant crops in magnesium deficient soils, which predominantly occur in Africa, India, South America and China. Three of these jurisdictions are proximate to Colluli, which is situated at the epicentre of population growth. The product also represents the diversification potential of Colluli which will transform into a multi agri-commodity business over time. Scoping work to integrate a SOP-M circuit in phase II of the Colluli development will commence shortly. We have commenced the process of engaging potential end users for the product.*”



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## Next Steps

Product specification sheets will be released in the near future.

The production of SOP-M is expected to further improve the highly favourable economics demonstrated in the DFS.

Scoping study work has commenced to integrate production of SOP-M into Phase II of the Colluli development.

Market engagement has commenced to determine the demand potential in South European, Middle East and Indian markets.

## About Colluli

In November 2015, Danakali released a positive definitive feasibility study (DFS) for Colluli which demonstrates industry leading capital intensity and lowest development costs relative to all sulphate of potash (“SOP”) projects at DFS level in the world. Bottom quartile operating costs are predicted. Mine life is estimated at over 200 years at the DFS production rate, providing the project with substantial growth potential.

The potassium bearing resource of the Danakil Depression has the unique capability to produce three of the four potash types in the global potash market which comprises potassium sulphate (sulphate of potash or SOP), potassium chloride (muriate of potash or MOP), potassium magnesium sulphate (sulphate of potash magnesia or SOP-M) and potassium nitrate (nitrate of potash or NOP).

## About SOP-M

SOP-M is a multi-nutrient potash type comprising potassium, magnesium and sulphur. Economically exploitable resources for primary production are scarce. There is a very limited number of producers worldwide, and production is currently limited to China, Germany and the USA. The product is both naturally occurring, and can be made by combining a variety of potassium and magnesium salts. Current primary production centres are geographically disadvantaged for product export (over 700km from the coast). Compound annual growth rates (CAGR) of SOP-M between 2005 and 2015 exceed 8%.<sup>1</sup>

## Three key nutrients in one particle – potassium, magnesium and sulphur

**Potassium (K):** Promotes healthy root systems and increases plant vigour and resistance to disease and cold. K is also essential in sugar and starch formation, and the movement of nutrients through plants.

**Magnesium (Mg):** The central component of chlorophyll, the pigment molecule responsible for absorbing sunlight during photosynthesis. Providing Mg and K in the proper balance helps increase plant strength and builds resistance to winter kill, drying, insect attack and spray damage.

**Sulphur (S):** Helps build proteins in plants and is a key component of many unique traits. S puts the “green and leafy” into crops like spinach, gives garlic and asparagus their distinctive flavours and improves the baking quality of wheat. Deficiencies of S are of particular concern, as sulphur dioxide emission-reduction programs cause less S to be returned to the soil via the atmosphere. The sulphate form of the S in SOP-M, aids initial root growth, and promotes seed production and vigorous plant growth.

<sup>1</sup> FERTECON



### Colluli product and comparison with SOP-M products

The Colluli SOP-M product is a very low chloride fertiliser product which contains a higher amount of the key macro-nutrient, potassium than other primary sources of SOP-M.

Product	K <sub>2</sub> O	MgO	SO <sub>4</sub>	Cl
Colluli SOP-M	25.5	11	46	0.4
K-Mag <sup>1</sup>	22.1	18	67	1.4
Trio <sup>2</sup>	22.2	18	67	1.5

<sup>1</sup> Sourced from Mosaic ([http://www.mosaicco.com/products/specialty\\_products\\_k-mag\\_granular\\_0-0-22.htm](http://www.mosaicco.com/products/specialty_products_k-mag_granular_0-0-22.htm))

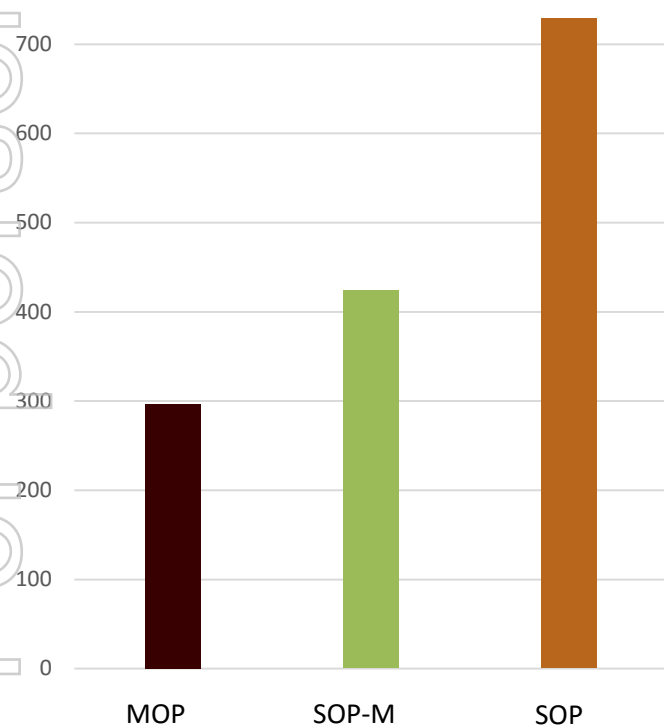
<sup>2</sup> Sourced from Intrepid Potash (<https://www.intrepidpotash.com/productssales/agriculturalproducts.aspx>)

### Price and price relativities

High quality, chloride free, multi-nutrient potash fertilisers carry a price premium relative to MOP. Economically exploitable resources for primary production of SOP and SOP-M are geologically scarce, which further highlights Colluli as a unique and world class potash resource. The price premium for SOP and SOP-M is highlighted below.

#### Potash Price (US\$/t)

[2015 average price]



*Average 2015 prices demonstrate a significant price premium of SOP-M over MOP*

Source: Greenmarkets, Compass Minerals quarterly reports [MOP = std FOB Vancouver, SOP = California, SOP-M = FOB Carlsbad]



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**About Danakali Ltd**

Danakali is an ASX listed company and 50% owner of the Colluli Potash Project in Eritrea, East Africa. The company is currently developing the Colluli Project in partnership with the Eritrean National Mining Company (ENAMCO).

The project is located in the Danakil Depression region of Eritrea, and is ~75km from the Red Sea coast, making it one of the most accessible potash deposits globally. Mineralisation within the Colluli resource commences at just 16m, making it the world's shallowest potash deposit. The resource is amendable to open pit mining, which allows higher overall resource recovery to be achieved, is generally safer than underground mining and is highly advantageous for modular growth.

The company has completed a prefeasibility study for the production of potassium sulphate, otherwise known as SOP. SOP is a chloride free, specialty fertiliser which carries a substantial price premium relative to the more common potash type; potassium chloride. Economic resources for production of SOP are geologically scarce. The unique composition of the Colluli resource favours low energy input, high potassium yield conversion to SOP using commercially proven technology. One of the key advantages of the resource is that the salts are present in solid form (in contrast with production of SOP from brines) with which reduces infrastructure costs and substantially reduces the time required to achieve full production capacity.

The resource is favourably positioned to supply the world's fastest growing markets.

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.

**Competent Persons Statement (Rock Salt Resource)**

Colluli has a JORC 2012 compliant Measured, Indicated and Inferred Mineral Resource estimate of 347Mt @96.9% NaCl. The resource contains 28Mt @ 97.2% NaCl of Measured Resources, 180Mt @ 96.6% NaCl of Indicated Resources and 139Mt @ 97.2% NaCl of Inferred Resources.

The information relating to the Colluli Rock Salt Mineral Resource estimate was compiled by Mr. John Tyrrell. Mr. Tyrrell is a member of the Australasian Institute of Mining and Metallurgy (AusIMM) and a full time employee of AMC. Mr. Tyrrell has more than 25 years' experience in the field of Mineral Resource estimation. He has sufficient experience relevant to the style of mineralisation and type of the deposit under consideration, and in resource model development, to qualify as a Competent Person as defined in the JORC Code.

Mr Tyrrell consents to the inclusion of this information in the form and context in which it appears. In undertaking the assignments referred to in this update, 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 Person believe that there is no conflict of interest in undertaking the assignments which are the subject of this update.

**Competent Persons Statement (Sulphate of Potash Resource)**

Colluli has a JORC 2012 compliant Measured, Indicated and Inferred Mineral Resource estimate of 1,289Mt @11% K<sub>2</sub>O. The resource contains 303Mt @ 10.98% K<sub>2</sub>O of Measured Resources, 951Mt @ 10.89% K<sub>2</sub>O of Indicated Resources and 35Mt @ 10.28% K<sub>2</sub>O of Inferred Resources.

The information relating to the Colluli Mineral Resource was compiled by Mr. John Tyrrell, under the supervision of Mr. Stephen Halabura M. Sc. P. Geo. Fellow of Engineers Canada (Hon), Fellow of Geoscientists Canada, and as a geologist with over 25 years' experience in the potash mining industry. Mr. Tyrrell is a member of the Australian Institute of Mining and Metallurgy and a full time employee of AMC. Mr. Tyrrell has more than 25 years' experience in the field of Mineral Resource estimation.

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 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code).

Mr. Tyrrell & Mr. Halabura consent to the inclusion of information relating to the Resource Statement in the form and context in which it appears.