Danakali’s Colluli potassium rich brines to improve processing

Danakali Limited (ASX:DNK) has discovered potassium rich brines that will assist processing and potentially improve the overall process product yield at its Colluli Potash Project in Eritrea, East Africa.

This follows the company completing successful pilot tests for the sulphate of potash (SOP) production process.

Colluli is a 50/50 joint venture between the Eritrean National Mining Company (ENAMCO) within the emerging potash province of Danakil.

The brines sit within the clastic layer, well above the rock salt and potash resource, and were identified during pump tests to support development and refinement of ground water models.

These tests have been used to estimate groundwater dewatering requirements and the effects of mining upon the groundwater system.

Potassium brines will removed during pit dewatering and utilised in the processing plant where the potassium will be recovered. Ground water depths range from 1.16 metres to 12.64 metres.

Dewatering rates are low enough to utilise a series of sump trenches with surface dewatering pumps.

Water flows through the clastics lithology in the northern pit are predicted to be in the range of 700 to 1845 square metres per day while flows through the southern pit clastics are predicted to be in the range of 3400 to 5700 square metres per day.

Paul Donaldson, managing director, said:

“This is a processing benefit. The potassium rich brines sitting above the resource, which will be abstracted as part of the pit dewatering program, represent an additional source of potassium to complement the mined potassium salts fed to the processing plant.

“This will potentially improve the overall process product yield. Important to note is that the chemistry of these brines in some cases is as good as, or better than potassium rich lake brines.”

Use of potassium brines

Potassium and sulphate rich brines are typically used to produce potassium sulphate or SOP by evaporating the brines to form a harvest salt which is then converted to SOP in a processing plant.

The potassium salts of Colluli start in solid form, negating the need for large footprint evaporation ponds, and time consuming evaporative harvest salt generation.

Colluli process water will be directed to a series of recovery ponds to recover any dissolved potassium exiting the plant.

The addition of potassium rich brines from the clastics to the processing plant will increase the overall potassium feedrate to the recovery ponds and ultimately increase the overall yield.
Colluli Potash Project

The Colluli Potash Project has a world-class 1.1 billion tonne Ore Reserve Estimate, comprising 287 million tonnes of Proved and 820 million tonnes of Probable Ore Reserve.

Mineralisation starts at just 16 metres, making the resource amenable to open cut mining methods.

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