

Beyondie SOP Plant Operations Update

Kalium Lakes Limited (ASX:KLL) (**Kalium Lakes** or the **Company**) provides a progress update on the commissioning of the SOP purification plant at its Beyondie SOP Mine (**Beyondie**).

- Design-grade KTMS feed to the Beyondie SOP purification plant was conducted in October with the plant operating mechanically well, achieving the highest average KTMS feed rate to date, with significant performance improvement within the schoenite circuit.
- Flotation and solid / liquid separation were limiting factors which constrained overall plant operation.
- Month-to-date (as at 29 October), the plant has achieved KTMS feed throughput of 19,566 tonnes and SOP production of 502 tonnes.
- Plant performance improvement plan is being developed on site with key project partner EBTEC and potash and flotation experts, with an aim to achieve progressive improvement of overall plant operation. EBTEC remain confident their 90ktpa nameplate performance guarantees will be met and are providing full technical support both from Germany and on site.
- Kalium Lakes will update the market on its previously advised timetable for production ramp up once the plant performance improvement plan has been finalised and implemented.

Kalium Lakes' Chief Executive Officer, Len Jubber, said:

"The performance of the plant since restart has shown improvement in its mechanical stability and reliability of operation which is pleasing. However, the design grade feed operation in October 2022 has shown that improved performance within the flotation circuit to match performance achieved in laboratory tests is needed to ramp up our production to targeted levels. A plant performance improvement plan is being progressed, and we remain confident that these plant operational challenges will be overcome."

Design grade feed outcomes

Design grade KTMS was fed to the SOP purification plant from early to late October during which 10,520 tonnes at an average 8.6% K material was processed.

Month-to-date plant performance (to 29 October 2022) is:

- KTMS feed throughput of 19,566 tonnes; and
- SOP production of 502 tonnes.

Key positives during the design grade feed period in October 2022 include:

- stable plant operation was achieved, supporting sample data collection and refinement of higher KTMS feed grade operating parameters;
- significant reductions in recirculating loads within the schoenite circuit; and
- SOP produced continues to meet or exceed target K grade specifications.

The table below details a comparison of the KTMS feed rate and schoenite production during the design grade feed period in October 2022 compared to the previous best operating period in July 2022.

	July 2022	Design Grade Feed Period	Change
Schoenite production (average tonnes per day)	138 tpd	296 tpd	+144%
KTMS feed grade (average % K)	6.9% K	8.6% K	+25%
KTMS feed rate (average tonnes per day)	510 tpd	809 tpd	+58%

Throughout the design grade feed period, Kalium Lakes' focus was on improving stability of the overall plant operation and the operation of the flotation circuit and, during this period, below-par flotation and solid / liquid separation were identified as limiting factors for the plant's operation, contrasting with laboratory test work to date which has generated significantly better results.

As a result of the limited flotation performance, the downstream operation of the SOP circuit was constrained and further refinement of the SOP circuit at higher schoenite throughputs is required to ensure the increased schoenite is converted to final SOP product at higher efficiencies than experienced at lower feed grades.

Having regard to the flotation and solid / liquid separation issues, the Company is progressing a plant performance improvement plan (refer below for further details). Kalium Lakes will provide an update to shareholders (via further ASX announcements) on the potential impact on its previously advised timetable for production ramp up once the plant performance improvement plan has been finalised and implemented.

Plant performance improvement plan

Kalium Lakes continues to be supported, both on site and remotely, by EBTEC through its leading SOP production technical expertise. The systematic commissioning of SOP purification plant operations has been jointly planned by the Kalium Lakes and EBTEC teams, in conjunction with international experts with both SOP processing operations experience and flotation experience.

All parties are focussed on developing a comprehensive plant performance improvement plan targeting systematic and progressive resolution of key issues and improvement of overall plant operation. The performance issues within the flotation circuit during the processing of design grade material are being investigated, with slurry conditioning, froth loading and froth mobility being targeted in a systematic manner.

A froth mobility trial encompassing the installation of a radial launder in flotation cell 1 (as shown in the photos below) is underway and preliminary results are positive.



Trial radial froth launder installation in flotation cell 1



Trial radial froth launder operation in flotation cell 1 on 28 October 2022

Further initiatives currently include:

- pursuing alternate means to increase the reagent dosage to identify whether above-design reagent addition similarly influences recovery as has been evidenced in laboratory testing;
- testing of flotation agent batches to check for possible aging effects and considering alternative reagents; and
- targeting increases in slurry conditioning prior to flotation through increasing the energy in the conditioning tanks.

Full nameplate operation of the plant is expected to be facilitated technically by EBTEC in accordance with the performance guarantees it has provided.

Financial

As at 28 October 2022, Kalium Lakes had approximately A\$27.4 million cash and A\$185.9 million of drawn senior debt facilities with NAIF and KfW. Undrawn debt capacity is A\$2.4 million under Facility A, provided by KfW, which is set aside for final commissioning payments, and A\$20 million under the Liquidity Facility provided by KfW and NAIF.

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*** ENDS ***

This announcement was approved and authorised for release by the Board of Kalium Lakes Limited.

Kalium Lakes Limited



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