

ASX Release
7 February 2018

COMPLETION OF PROCESS TESTWORK STUDIES

Highlights

- PFS process testwork successfully validates the use of conventional SOP production techniques and produces high quality SOP samples that exceed industry benchmark grades
- Process studies indicate an overall Potassium recovery of 80%, representing an improvement from the estimated recovery of 69% in the Scoping Study
- Construction of pilot evaporation ponds is underway to test the PFS pond design at site

Agrimin Limited (ASX: AMN) (“Agrimin” or “the Company”) advises the completion of brine evaporation trials and process testwork as part of the Pre-Feasibility Study (“PFS”) for its Mackay Sulphate of Potash (“SOP”) Project in Western Australia.

Figure 1. SOP Samples Packaged for Distribution to Customers



The Company is pleased with the positive results of the process testwork studies. Key objectives of the PFS level work were achieved, including:

- the development of detailed process flowsheets to be validated during a Definitive Feasibility Study (“DFS”); and
- design and testing directives for the pilot evaporation ponds which are currently under construction and will operate throughout 2018.

An extensive PFS testwork program has validated the Scoping Study findings that the Lake Mackay brine is suitable for the production of commercial grade SOP using conventional processing techniques. In addition, detailed process engineering studies have optimised the evaporation pond design and operating methodology, resulting in the estimated overall Potassium recovery rate increasing to 80%.

The PFS testwork produced SOP samples ranging from 52% to 54% K₂O, exceeding the typical grades for SOP products sold in global markets. SOP samples produced by Agrimin have undergone preliminary analysis by potential off-take parties which has confirmed the SOP produced to date meets customer specifications.

Brine Evaporation Testwork & Pond Design

During May to November 2017, a series of brine evaporation trials were completed by the Saskatchewan Research Council (“SRC”) under the directive of Global Potash Solutions (“GPS”). Both groups are based in Saskatoon, Canada, and are globally recognised experts in the field of potash processing.

A bulk sample of 10,000L of Lake Mackay brine with chemistry representative of the overall Mackay SOP Project area was used. Pre-concentration of the bulk brine sample was completed at Independent Metallurgical Operations’ (“IMO”) laboratory in Perth, Australia.

Approximately 800L of pre-concentrated brine was shipped to SRC’s laboratory in Saskatoon and three phases of evaporation testwork were completed to test the variability of several parameters. The tests were undertaken in evaporation pans which were designed to replicate a scaled version of the proposed full-scale pond design. The pan evaporation system included constant brine feed, temperature control, a wind simulation system and lake wave simulation system.

The evaporation testwork and subsequent mass balance have resulted in an optimised evaporation pond design utilising five ponds.

The starting brine chemistry at Lake Mackay is not fully saturated in salts, so it firstly enters Pond 0 where the brine concentration increases to the point where salt precipitation will commence. This fully saturated brine is transferred to Ponds 1 and 2 where halite (NaCl) and thenardite (Na₂SO₄) are precipitated. The brine is then transferred to Pond 3 where epsomite (MgSO₄.7H₂O) is precipitated. Halite, thenardite and epsomite are considered to be waste salts and retained within the on-lake evaporation ponds. Control of epsomite precipitation in Pond 3 is assisted by the recirculation of bittern brines.

Lastly, kainite (KCl.MgSO₄.2.75H₂O) is precipitated in Pond 4. Kainite is the targeted Potassium bearing salt which will be collected via wet harvester and fed to the process plant. Assay results show that kainite salt samples produced during the SRC testwork contained 56% to 62% kainite and no deleterious elements were

present. This high grade kainite is suitable for the production of SOP (K_2SO_4) using a conventional process plant configuration (i.e. flotation, decomposition and SOP conversion).

Solids Processing Testwork & Plant Design

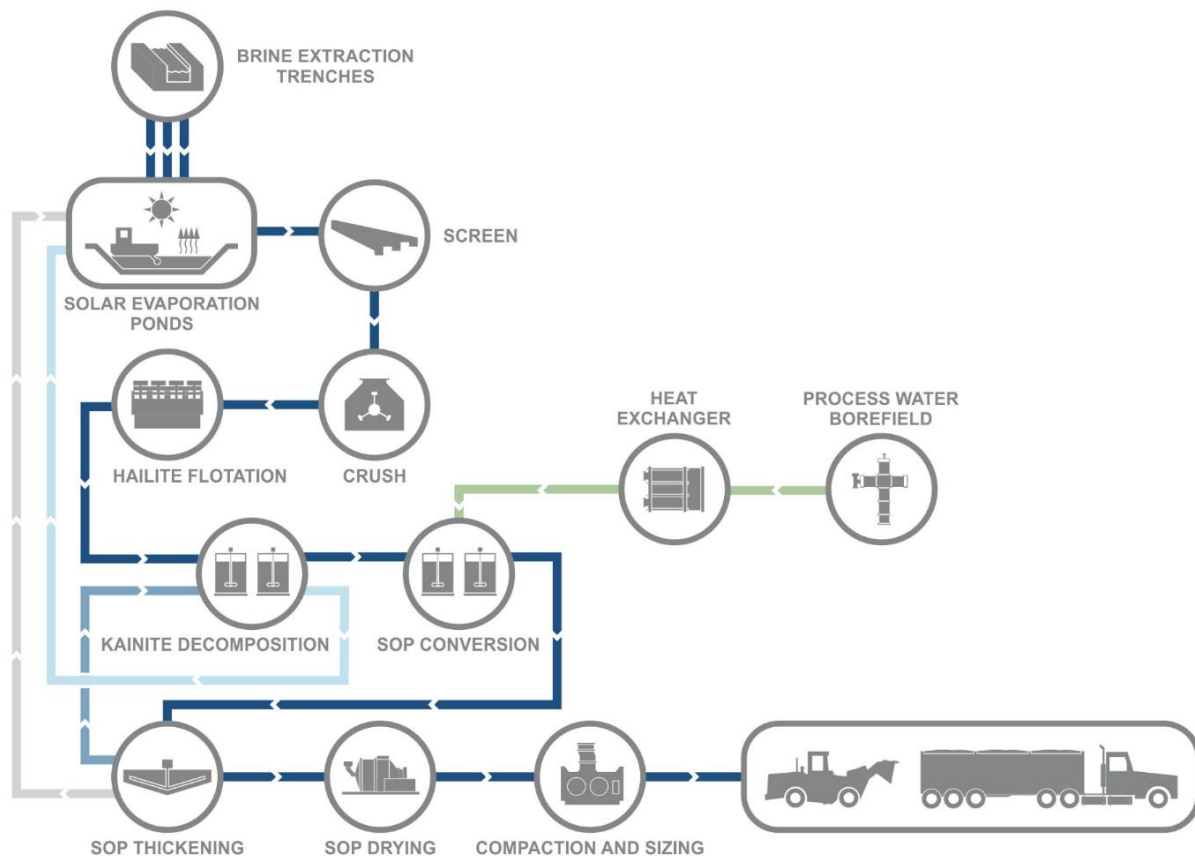
During the period of September to November 2017, SRC undertook flotation, decomposition and SOP conversion testwork using the kainite salts produced during the brine evaporation trials. Based on the testwork results, GPS completed the mass balance and the process plant design.

The plant design starts with the kainite salts harvested from the evaporation ponds being crushed to 850 microns and fed into a flotation circuit to separate the kainite from halite and other minor salts. Following flotation, the concentrated kainite is decomposed to schoenite ($K_2SO_4 \cdot MgSO_4 \cdot 6H_2O$).

Following decomposition, the concentrated schoenite undergoes SOP conversion using heated water (reaction temperature at $50^\circ C$) to dissolve magnesium sulphate ($MgSO_4$) and thereby precipitate SOP (K_2SO_4). The SOP crystals are then dried, screened, sized and prepared in order to meet required customer specifications.

The hot brine generated from the SOP conversion step is recycled to precipitate schoenite for SOP conversion or cooled for use in the kainite decomposition step. These recycle streams were tested by SRC as part of the process testwork which allowed full closure of the mass balance.

Figure 2. Simplified Process Flow Diagram



The process design incorporates all outflows from the process plant being recirculated back to the on-lake evaporation ponds. The main recovery loss is associated with Potassium-bearing brine entrained within the pore spaces of solid waste salts in Ponds 1, 2 and 3. The remaining loss is associated with solid phase Potassium which is unleachable within the flotation tails and is retained within Pond 2.

Optimisation of the evaporation pond design and operating methodology has resulted in an increased overall Potassium recovery. The PFS mass balance estimates an overall Potassium recovery of 80%, compared to previously estimated recovery of 69% in the Scoping Study.

Pilot Evaporation Trial

A pilot-scale version of the evaporation pond design described above is currently under construction on Lake Mackay to facilitate a long-term evaporation trial to support a DFS. The pilot evaporation pond program is primarily designed to test the following key parameters:

- Confirm the evaporation and crystallisation pathway of the lake brines under site conditions with daily and seasonal variation;
- Provide further supporting evaporation data for pond sizing and configuration purposes;
- Confirm applicable geotechnical parameters to feed into scaled-up pond designs; and
- Address other specific technical parameters including pond operating depth, brine entrainment, pond start-up and timing, and other operating requirements.

The site evaporation trial is expected to produce kainite salt samples that are more representative of those anticipated at full-scale, particularly in terms of crystal size and structure, and will allow refinement of the detailed PFS process flowsheets. In addition, subsequent processing of the kainite salts will target the production of a high quality SOP product (52% K₂O) which will be used for a range of product development and marketing purposes.

ENDS

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About Agrimin

Based in Perth, Agrimin Limited is a leading fertilizer development company focused on the development of its 100% owned Mackay SOP Project. The Project is situated on Lake Mackay in Western Australia, the largest undeveloped SOP-bearing salt lake in the world. Agrimin is aiming to be a global supplier of high quality SOP fertilizer to both traditional and emerging value-added markets. Agrimin Limited's shares are traded on the Australian Stock Exchange (ASX: AMN).

Forward-Looking Statements

This ASX Release may contain certain "forward-looking statements" which may be based on forward-looking information that are subject to a number of known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here. Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. Forward-looking information includes exchange rates; the proposed production plan; projected brine concentrations and recovery rates; uncertainties and risks regarding the estimated capital and operating costs; uncertainties and risks regarding the development timeline, including the need to obtain the necessary approvals. For a more detailed discussion of such risks and other factors, see the Company's Annual Reports, as well as the Company's other ASX Releases. Readers should not place undue reliance on forward-looking information. The Company does not undertake any obligation to release publicly any revisions to any forward-looking statement to reflect events or circumstances after the date of this ASX Release, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.

Competent Person's Statements

The information in this ASX Release that relates to the interpretations of process testwork results was undertaken by Mr Don Larmour who is a full-time employee of Global Potash Solutions Inc. Mr Larmour is a chemical engineer with 36 years experience working in potash processing and is independent to Agrimin. Mr Larmour has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code 2012 Edition). Mr Larmour consents to the inclusion of such information in this statement in the form and context in which it appears.