ASX Release

Thursday 23 February 2017

Pre-Feasibility Study Nearing Completion

Highlights

- Kalium Lakes confirms work associated with the Beyondie Sulphate of Potash (SOP) Project **Pre-Feasibility Study is well advanced and will be completed mid-2017**.
- PFS works are set to expand on the **strong foundations** set from previous technical reports, engineering studies, approvals and potential capital and operating costs.
- The PFS **reviews several potential production throughput scenarios** to determine a preferred production target.
- The base design philosophy is to allow for a **staged development approach** to minimise initial capital requirements, keep operating cost low and progressively grow market sales.
- **German Potash Experts, K-UTEC,** in conjunction with the Kalium Lakes team and several other specialised consultants will deliver the PFS.

Kalium Lakes Limited (KLL) announced today that work associated with the Pre-Feasibility Study (PFS) which has utilised the German potash experts K-UTEC, in conjunction with the KLL team and several other leading industry specialist consultants, is well advanced.

The PFS has reviewed several potential production scenarios (Cases) and will ultimately determine the preferred Case, following the completion of the proposed drilling and pump testing during the next few months. On completion of the PFS, further validation of the preferred Case will occur during the Feasibility Study (FS) stage, prior to funding activities and a Final Investment Decision (FID) to proceed with construction and operation of the Project.

Managing Director, Brett Hazelden, commented, *"Prior to listing, we were able to complete a number of detailed technical reports, engineering studies and gain key approvals for the Project, which will assist in the rapid completion of the PFS once an upgraded resource is available"*

The Project's high potassium grade, low impurity levels of sodium chloride, as well as the close proximity to a port, gas pipeline and main road gives the project a key strategic advantage which should translate to capital and operation cost benefits," he said.

Kalium Lakes also confirmed the installation of the core accommodation and infrastructure facilities was underway and should be completed in the coming weeks. KLL will also commence a drilling and pump testing program designed to increase confidence of mineral resources.

The PFS works will expand on the strong foundations set from previous technical reports and studies, which concluded that the Project is economically robust and has the potential to generate substantial value for shareholders.

The PFS aims to present information at the necessary level of definition and accuracy serving as a key reference for the Company to consider the financial viability and future development potential of the Project.

The phased study approach, adopted during the process of evaluating the Project, is illustrated in Figure 1 (see below):

Figure 1 - Beyondie Sulphate of Potash Project Investment Evaluation

Beyondie Potash Project Production Process

The exploration and development activities undertaken in an SOP operation, such as that proposed to be undertaken by the Company at the Project, will encompass the following key stages as illustrated in Figure 2 (below):

(a) **Brine Pumping:** Brine is pumped from basal sands (or lower aquifer) from submersible bores plus trenches from the upper aquifer;

(b) **Brine Solar Evaporation:** Brine is pumped to solar evaporation ponds where it sequentially precipitates calcium, sodium, potassium and magnesium mixed salts in separate ponds;

(c) **Salt Harvesting:** the mixed potassium salts that have crystallized from the solar evaporation ponds are mechanically harvested and stockpiled;

(d) **Purification Processing:** the mixed potassium salts are fed into a purification plant facility where the potassium salts are separated from halite via flotation, then converted into schoenite through a conversion and recycling process. The resultant schoenite slurry undergoes thermal decomposition into SOP; and

(e) **SOP Fertiliser:** after drying and compaction in a purification plant, the SOP is ready to be used and sold as a final product.

Figure 2 – Simple SOP Production Process

Key Factors and Assumptions

This PFS is continuing to review the preferred production Case, with a key assumption being the staged development of the project, where an initial start-up capacity is achieved followed by the doubling of capacity.

Kalium Lakes considers that the implementation of the Project in two stages is an ideal strategy which will minimise initial upfront capital costs, manage risk, reduce shareholder dilution and enter the market in a sustainable, non-disrupting manner.

The PFS will determine the preferred base Case with Stage One likely to assume:

a) Installation of evaporation and crystalliser ponds at the Beyondie -10 Mile Area;
b) Installation of production bores and trenches at Beyondie, 10 Mile and Sunshine Lakes;
c) Installation of purification facility and ramp up to nominated production rate;
d) 78 km of access road widening, realignment and construction; to connect the project site with the Great Northern Highway
e) 78 km natural gas pipeline installed and connected with the existing Goldfields Gas Pipeline (with potential to defer to expansion stage);
f) Installation of accommodation, buildings, services and utilities as required;
g) Use of the Main Roads WA network from the Kumarina Roadhouse located on the Great Northern Highway to the various WA depots and Geraldton Port for product delivery; and
h) Use of Geraldton Port Facilities to access Eastern Australia and Asian export markets.

The Stage Two expansion phase will plan to double production and is likely to assume:

a) Installation of additional evaporation and crystalliser ponds at western and eastern lakes;
b) Installation of additional production bores and trenches at western and eastern lakes;
c) Installation of road and Potassium Brine pipeline between western and eastern lakes;
d) Expansion of buildings, services and utilities as required; and
e) Expansion of port export facilities.

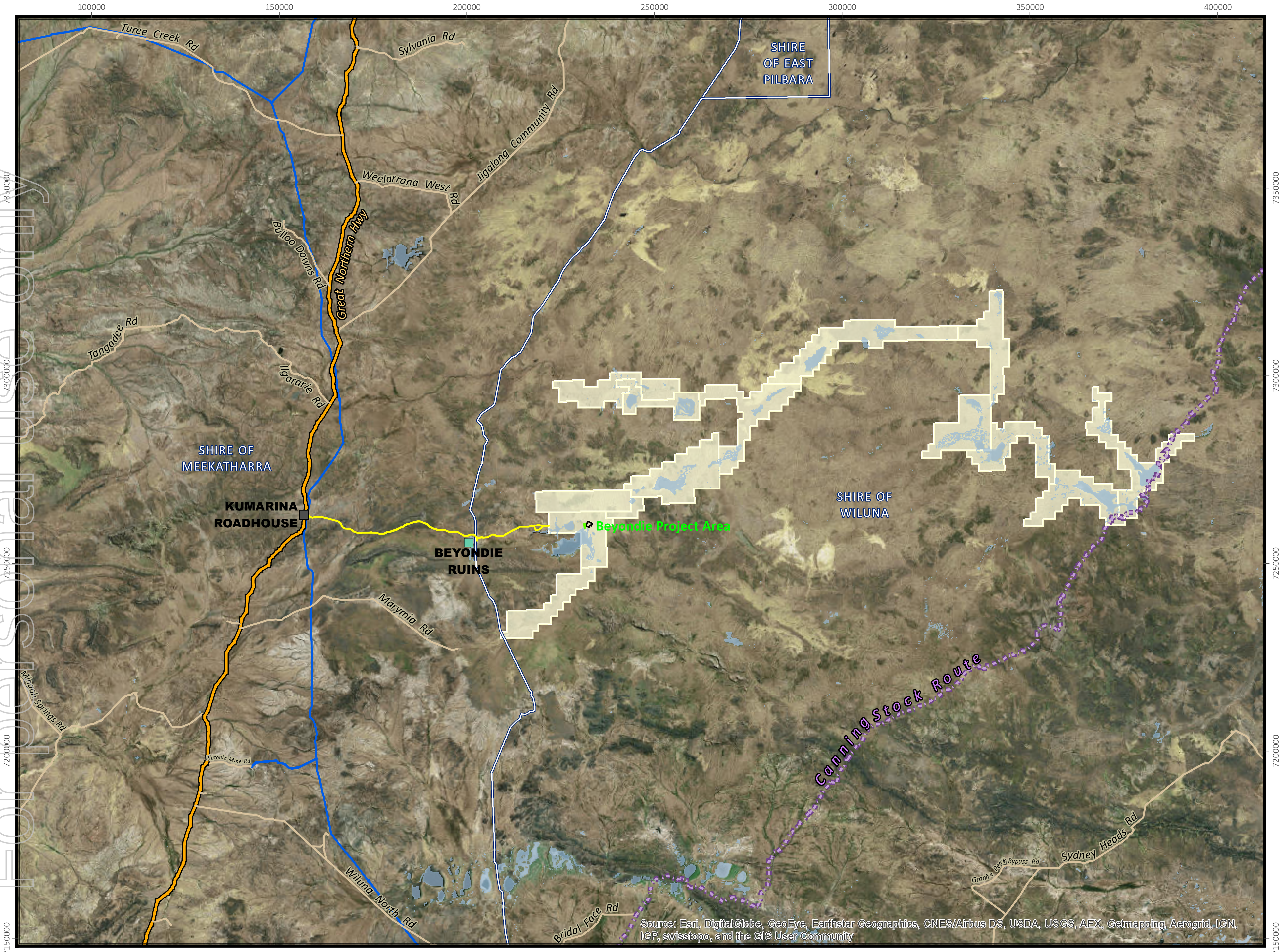
Key factors and assumptions associated with the PFS are summarised in Table 1 (below):

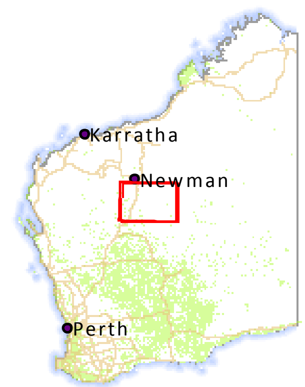
Table 1 - Key Factors and Assumptions

Facility	Key Area / Characteristic	Details/Comments	
Location	Mine	Beyondie Paleo Valley, 78 km East of Kumarina Road House	
	Tenements	E69/3306, E69/3309, E69/3339, E69/3340, E69/3341, E69/3342, E6/3343, E69/3344, E69/3345, E69/3346, E69/3347, E69/3348, E69/3351, E69/3352	
	Tenement Area	>2,400 km^2 granted tenements	
Timeframes	Life of Mine	TBD based on selected base case production rate	
	Pre-Feasibility Study Complete	Mid CY 2017	
	Feasibility Study Complete	TBD as part of PFS	
Marketing	Product Sales K_2SO_4	Targeting Australian Potash market initially	
		No Australian production of Potash	
		Mix of standard and granular SOP product	
		Expansion into Asian Markets	
Resource	Low Na:K Ratio	8.9 : 1	
	Mineral Resource (JORC/CIM) (Current PFS activities aims to improve on these numbers)	Indicated	0.9 Mt SOP @ 7,145 mg/L K, 15.9 kg/m^3 K_2SO_4
		Inferred	18.8 Mt SOP @ 6,051 mg/L K, 13.5 kg/m^3 K_2SO_4
		Total	**19.7 Mt SOP** @ 6,094 mg/L K, 13.6 kg/m^3 K_2SO_4
		Exploration Target	1.6 to 15.9 Mt K, 3.5 to 35 Mt SOP
	Non-CIM Mineral Resource (For Comparative Purposes Only)	**Total Stored Brine**	**148 Mt SOP**
Pumping & Evaporation	Dewatering	Diesel/Solar Powered Brine Extraction Pumps and Piping	
	Brine Extraction	Bores, sumps, trench	
	Evaporation ponds	Located off the lake surface to minimise pond leakage	
	Equipment	Salt Harvester, trucks, pipes, pumps and telemetry	
	Waste Salt Disposal	Stockpiled and/or sold as a product	
Processing	SOP Plant Summary	Front end loader (FEL) reclaim from raw salt stockpile, crushing, flotation, Conversion, Crystallisation, Compaction, product stockpiling and packaging	
	Stage One Production	PFS is investigating several potential production scenarios	
	Stage Two Production	Double Stage One Production Capacity	
	Potassium Recovery	60-70%	
	Product Packaging	1-2 tonne Bulk Bags and/or Container Bulk and/or Bulk Product	
Infrastructure	General	Buildings & workshop facilities to support construction, processing, road haulage, port and maintenance operations	
	Support Infrastructure	Cooling towers, Chillers, Condensers and Steam production	
	Communications	Fibre Optic from Kumarina Roadhouse plus mobile coverage via communications towers; satellite during initial construction period	
	Water Supply	Water bores, pipeline and water treatment plants	
	Waste Water Treatment	WWTP located at Village. Septic tanks at all other locations	
	Operations Accommodation	Permanent Ensuited Rooms inclusive of shut down & visitor allowance	
	Gas Pipeline	78km pipeline, connected to Goldfields Gas Pipeline (optional stage 1)	
	Power Generation	Gas or Diesel	

Facility	Key Area / Characteristic	Details/Comments	
Access Road & Product Haulage	Access Road	78km Unsealed road from the sealed Great Northern Hwy. Turn off located near Kumarina Roadhouse	
	Distance to Distribution Locations	Geraldton	862 km
		Port Hedland	700 km
		Perth / Kwinana	1,088 km
		Kalgoorlie	1,030 km
	Fleet Details	Triple or quad trailer road trains	
		Owner Operated road trains	
		Supplemental backhaul contractors returning from Newman to Perth	
Port	Port Location	Geraldton and/or Perth	
	Product Delivery	Break Bulk (i.e. 1-2 tonne Bulk Bags) / Container Bulk / Bulk	
	Storage	Single Shed at Geraldton Port and/or Perth	
	Shipping	Sea Container, Break Bulk Cargo, Bulk Cargo Facility	
	Memorandum of Understanding	Signed with the Mid-West Port Authority (MWPA)	
Operating Personnel	Roster	2 weeks on and 2 weeks off (family friendly)	
	Airport	Newman schedule domestic flights	
	Work Force	TBD but ~100 employees	
Climate	Rainfall	Average annual mean rainfall of 238 mm	
	Temperature	Average annual mean minimum temperature is 15˚C	
		Average annual mean maximum temperature is 31˚C	
	Evaporation	Average annual evaporation is estimated to be 4,100 mm	
	Relative humidity	15% to 40%	
	Winds	Predominantly Easterlies	
PFS Accuracy	Capex Accuracy	+/- 25% Class 4 (AACE)	
	Opex Accuracy	+/- 25%	

The Project footprint is shown in Figures 3 and 4 (see below) as well as existing transport infrastructure, access road, the Goldfields Gas Pipeline (GGP) and the Kumarina Roadhouse located on the Great Northern Highway.





Kalum Lakes Limited:
Beyondie Sulphpate of Potash Project

Legend

- Beyondie Misc. Lic. L52/162
- Canning Stock Route
- Major Roads and Highways
- Local Roads
- Local Govt Boundaries
- Goldfields Gas Transmission Pipeline
- Kalium Lakes Tenements

N

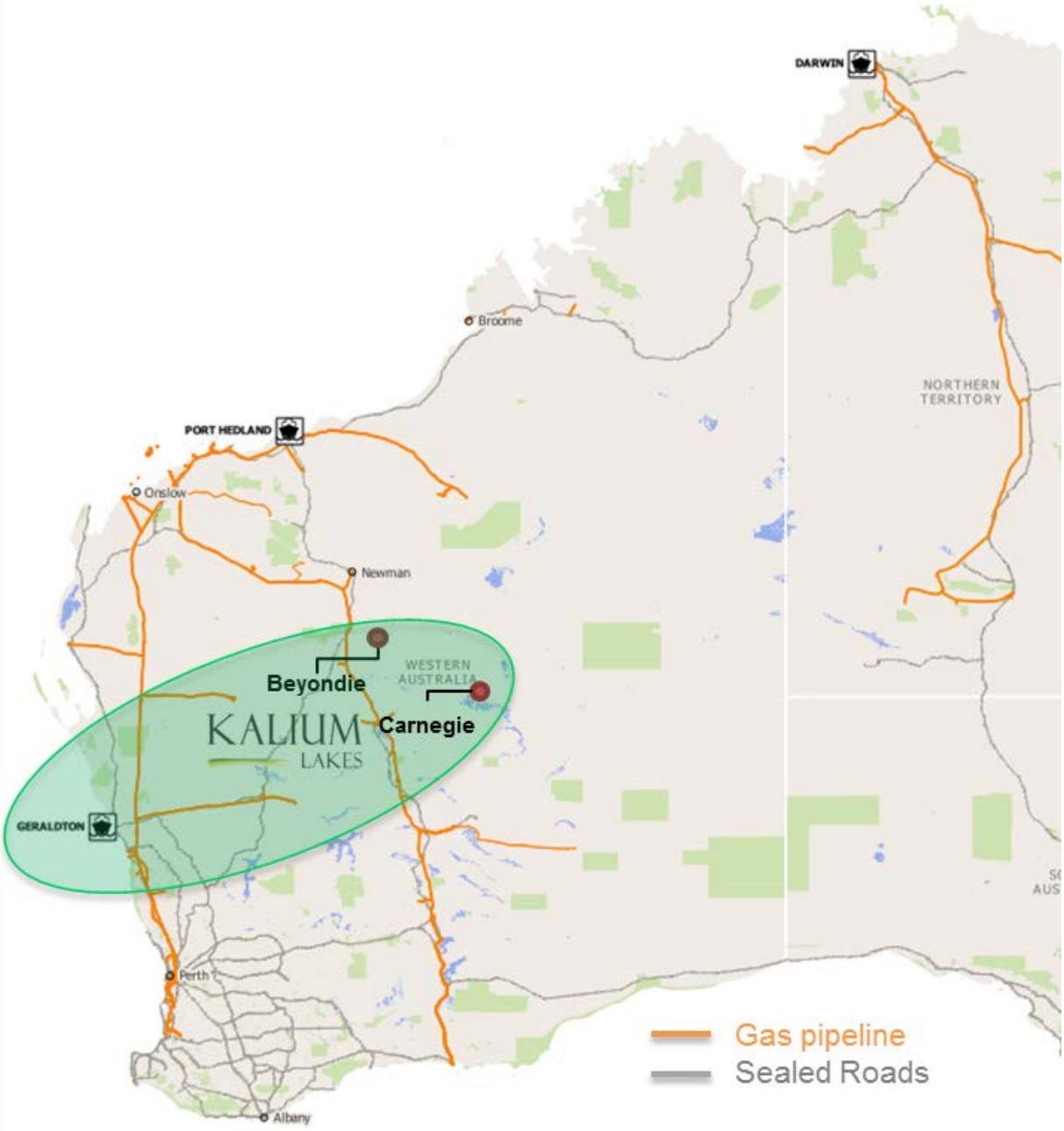
0 10 20 30 40 50
kilometres

Scale 1:1,000,000@ A3

KALIUM LAKES

Figure 3: Footprint - Beyondie Sulphate Of Potash Project: Pilbara Region, Western Australia

Figure 4 – Beyondie Sulphate of Potash Project Location



Compliance Statement

The information in this document that relates to Mineral Resources Estimates has been extracted from the reports listed below.

- 11 January 2017:
  Resource Statement and Technical Report - “Technical Report for the Beyondie Sulphate of Potash Project, Australia, JORC (2012) and NI 43-101 Technical Report" dated 23 May 2016
- 28 November 2016:
  Disclosure Document - Kalium Lakes Limited Independent Expert's Report Project Number AU9636 October 2016

The Reports are available for download from the KLL page of the ASX website and via the “ASX Announcements” page at: www.kaliumlakes.com.au

Kalium Lakes confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

Cautionary Statement Regarding Forward-Looking Information

All statements, trend analysis and other information contained in this document relative to markets for Kalium Lakes trends in resources, recoveries, production and anticipated expense levels, as well as other statements about anticipated future events or results constitute forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as “seek”, “anticipate”, “believe”, “plan”, “estimate”, “expect” and “intend” and statements that an event or result “may”, “will”, “should”, “could” or “might” occur or be achieved and other similar expressions. Forward-looking statements are subject to business and economic risks and uncertainties and other factors that could cause actual results of operations to differ materially from those contained in the forward-looking statements. Forward-looking statements are based on estimates and opinions of management at the date the statements are made. Kalium Lakes does not undertake any obligation to update forward-looking statements even if circumstances or management’s estimates or opinions should change. Investors should not place undue reliance on forward-looking statements

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Corporate Profile (as at 23 February 2017)

Kalium Lakes Limited is an exploration and development company, focused on developing the Beyondie Potash Project in Western Australia with the aim of producing Sulphate of Potash (SOP) for the domestic and international markets.

The Beyondie Potash Project comprises 15 granted exploration licences and a miscellaneous licence covering an area of approximately 2,400 square kilometres. This sub-surface brine deposit will supply an evaporation and processing operation located 160km south east of Newman.

Kalium Lakes Limited

ABN: 98 613 656 643
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Ordinary Shares on Issue: 121,794,740

Board of Directors:

Mal Randall	Non-Executive Chairman
Brett Hazelden	Managing Director
Rudolph van Niekerk	Non-Executive Director
Brendan O'Hara	Non-Executive Director

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