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# BEYONDIE POTASH PROJECT

Working to Become Australia's First Sulphate of Potash Producer

## Investor Update

April 2017





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## **Acceptance**

By attending an investor presentation or briefing, or accepting, accessing or reviewing this document you acknowledge and agree to the "Disclaimer" as set out above.

## **Compliance Statement**

The information in this document is extracted from the report titled "TECHNICAL REPORT FOR THE BEYONDIE POTASH PROJECT, AUSTRALIA, JORC (2012) and NI 43-101 Technical Report" and dated 23 May 2016 (Report), that relates to Exploration Targets, Exploration Results and Mineral Resources and is based on information compiled by Thomas Schicht, a Competent Person who is a Member of a 'Recognised Professional Organisation' (RPO), the European Federation of Geologists, and a registered "European Geologist" (Registration Number 1077) and Anke Penndorf, a Competent Person who is a Member of a RPO, the European Federation of Geologists, and a registered "European Geologist" (Registration Number 1152). Kalium Lakes confirms that it is not aware of any new information or data that materially affects the information included in the original announcement regarding the Report and, in the case of estimates of Mineral Resources, which all material assumptions and technical parameters underpinning the estimates in the relevant announcement continue to apply and have not materially changed. Kalium Lakes confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original announcement regarding the Report.

Thomas Schicht and Anke Penndorf are full-term employees of K-UTECH AG Salt Technologies (K-UTECH). K-UTECH, Thomas Schicht and Anke Penndorf are not associates or affiliates of Kalium Lakes or any of its affiliates. K-UTECH will receive a fee for the preparation of the Report in accordance with normal professional consulting practices. This fee is not contingent on the conclusions of the Report and K-UTECH, Thomas Schicht and Anke Penndorf will receive no other benefit for the preparation of the Report. Thomas Schicht and Anke Penndorf do not have any pecuniary or other interests that could reasonably be regarded as capable of affecting their ability to provide an unbiased opinion in relation to the Beyondie Potash Project.

K-UTECH does not have, at the date of the Report, and has not had within the previous years, any shareholding in or other relationship with Kalium Lakes or the Beyondie Potash Project and consequently considers itself to be independent of Kalium Lakes.

Thomas Schicht and Anke Penndorf have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Thomas Schicht and Anke Penndorf consent to the inclusion in the Report of the matters based on their information in the form and context in which it appears.

## Why Kalium Lakes?

Recent Achievements

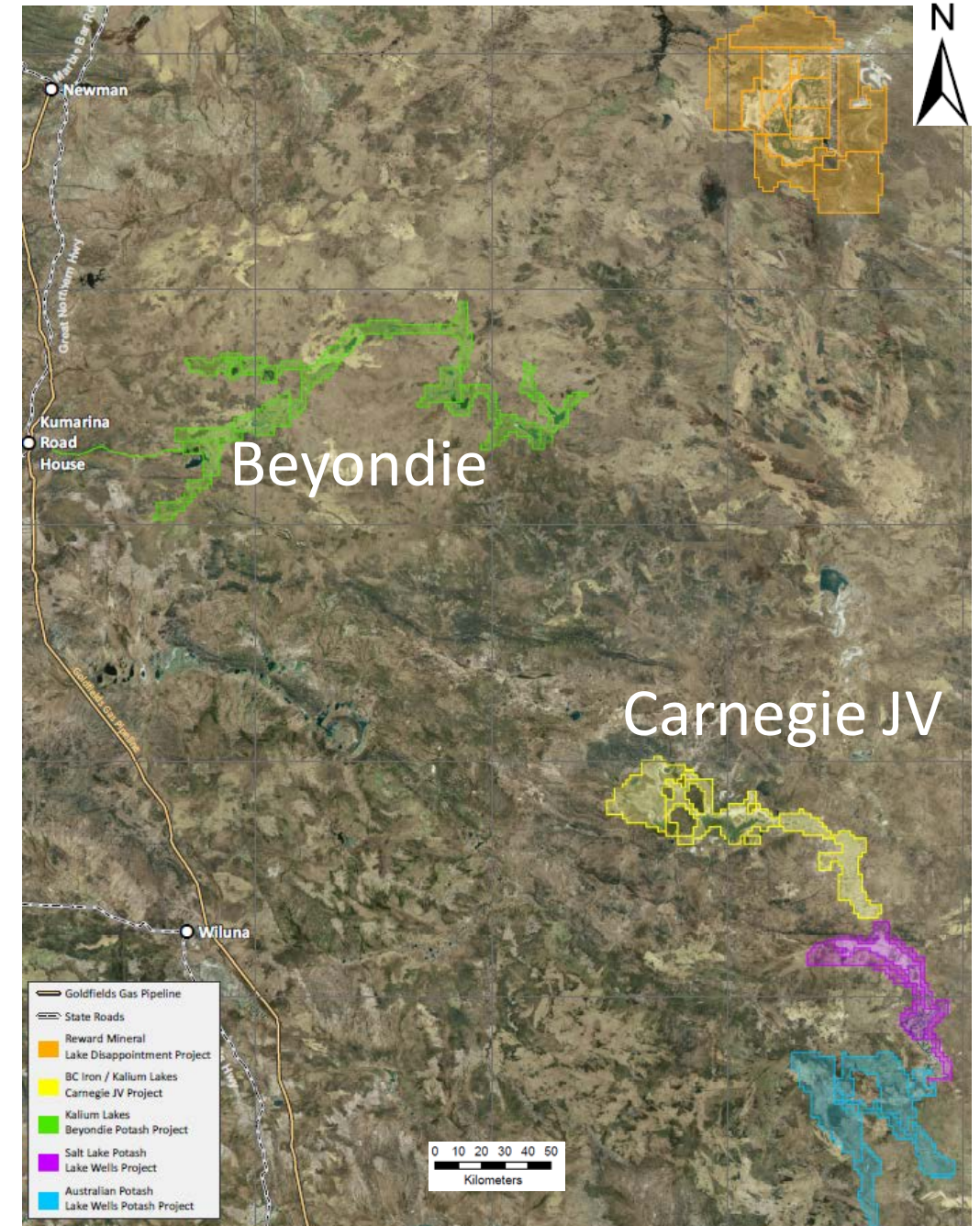
Premium SOP Market

Beyondie Project

Carnegie Joint Venture

# Recent Kalium Lakes Achievements

- ✓ Oversubscribed \$6M IPO Completed
- ✓ Share Price Up ~100% since IPO
- ✓ Drilling Recommended at Beyondie
- ✓ Supporting Infrastructure Installed
- ✓ PFS and Reserve Nearing Completion
- ✓ Chief Development Officer Appointed
- ✓ Carnegie JV Announced – Second Project
- ✓ \$536k Additional R&D Refund Received





# Recent Kalium Lakes Achievements



**Geophysics Ongoing**



**Drilling at 10 Mile Lake Area**



**Paleochannel Sands & Surface Alluvium**



**~200km of roads graded, widened or newly installed**



**16 Man Camp & Workshop Installed**



**Access Road near Beyondie Lakes**



**Pond Construction Verification Trial Area**

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- ✓ Potassium Sulphate (SOP) is a Premium Fertilizer
- ✓ Supply Does Not Meet Demand
- ✓ No Current Production in Australia
- ✓ Leveraged to 'Feeding the World' Thematic
- ✓ Potassium is One of 3 Essential Plant Nutrients
- ✓ Global SOP Market is ~6Mtpa, worth ~US\$3-4Bpa
- ✓ Current SOP Price in Australia is +A\$950/t
- ✓ Existing Brine Producers' Cost of Production ~US\$200/t



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# Investment Highlights – Beyondie SOP Project

- ✓ Australia's Highest Grade Brine Deposit
- ✓ Lowest Impurity Levels = Least Waste Salt Production
- ✓ Smallest Comparable Environmental Footprint
- ✓ 19.8Mt SOP Drainable SOP Resource  
(148Mt SOP Total Brine Volume Estimate)
- ✓ Closest Australian Brine Project to Existing Port,  
Road & Gas Pipeline Infrastructure
- ✓ Pilot Pond Approvals Obtained - DMP, DER & DoW
- ✓ Native Title Mining Agreement Signed, 2<sup>nd</sup> in Progress
- ✓ MoU in Place with Geraldton Port Authority





# Simple SOP Production Process

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**Brine Pumping from Bores and Trenches**  
5 Million litres successfully pumped



**Brine Solar Evaporation**  
Located in high evaporation region



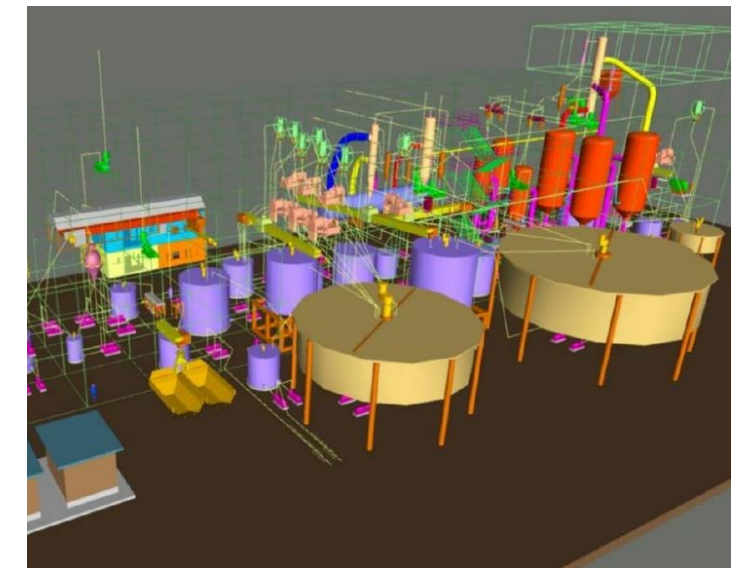
**Salt Harvesting**  
Low cost well proven process in Western Australia



**Agriculture Production**  
Australian and Asian Markets



**Premium SOP Fertiliser**  
High demand, preferred source of potassium for agricultural industry



**Purification Processing**  
Using proven German SOP technology



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A large version of the KALIUM LAKES logo centered on a light gray background. The word "KALIUM" is in a large, black, serif font. Below it is a horizontal brushstroke in shades of green and yellow. To the right of the brushstroke is the word "LAKES" in a black, serif font. Below "LAKES" is the tagline "Making it Grow" in a black, italicized, sans-serif font.

<https://www.youtube.com/embed/VEbbCzg7dhs>

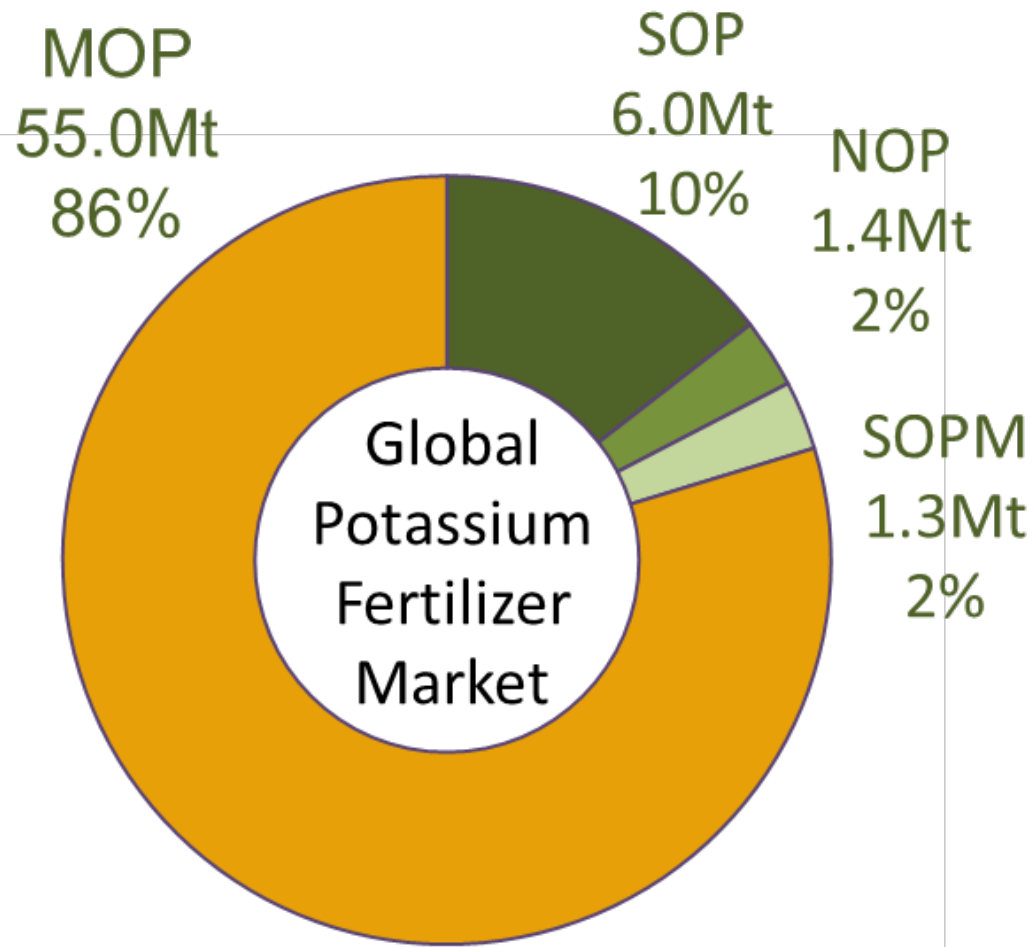


## Additional Detail



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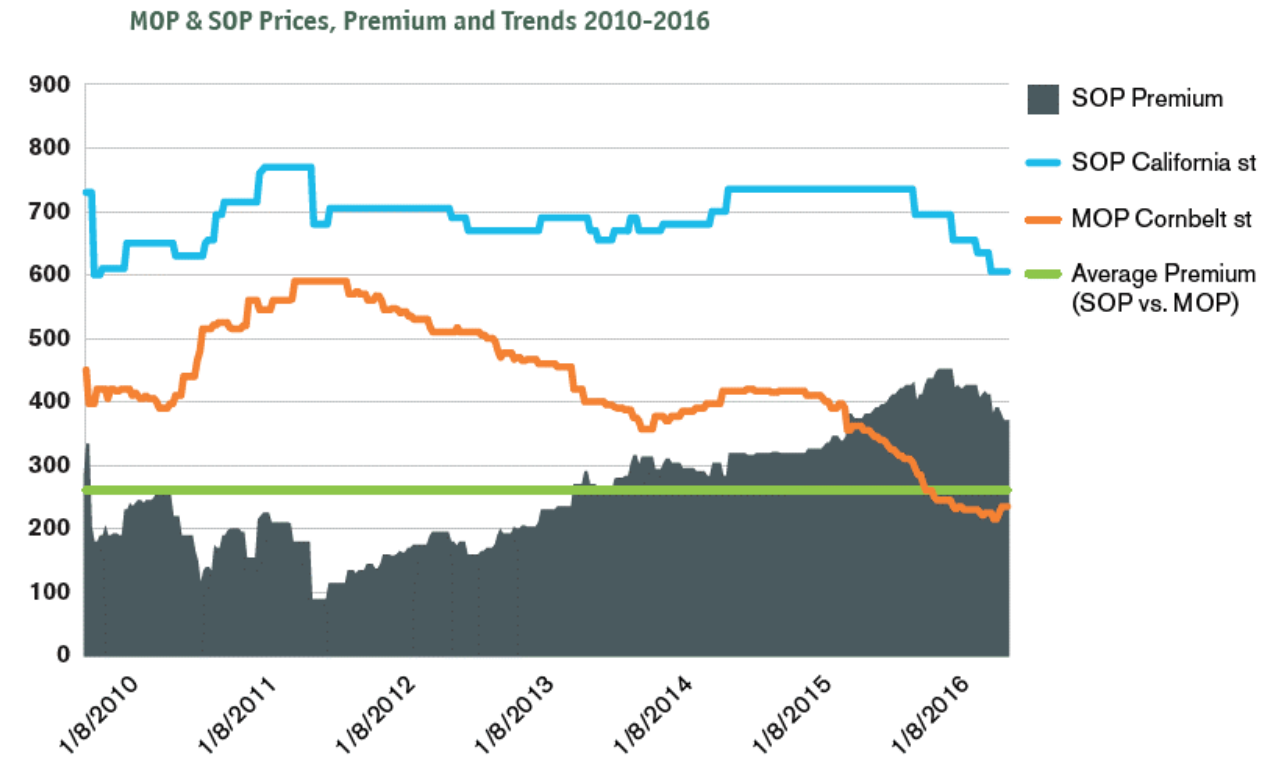
*NOP – Potassium Nitrate*

*SOPM – Sulphate of Potash Magnesia*

- The global potassic fertiliser market totals 60 to 70 million tonnes per annum
- No Australian Potash Production
- Muriate of Potash (“MOP” or “KCl”) most common form of potassium fertiliser
- Sulphate of Potash (“SOP” or “K<sub>2</sub>SO<sub>4</sub>”) used principally for specialty crops: fruits, nuts, vegetables, berries, beans and cocoa
- Australian potassic fertiliser demand totaled 300ktpa during past 5 years and exceeded 400 thousand tonnes in 2015



- SOP commands a significant premium over the MOP market
- The SOP fertiliser market is worth about US\$3-4 Billion annually
- Salt index of MOP is a key issue, leading to seedling toxicity and overall accumulation of salts in the soil profile
- SOP does not contain any chloride, improving plant and soil health
- SOP contains sulphur, a secondary nutrient for healthy plant growth
- Sulfur deficiency is a growing issue



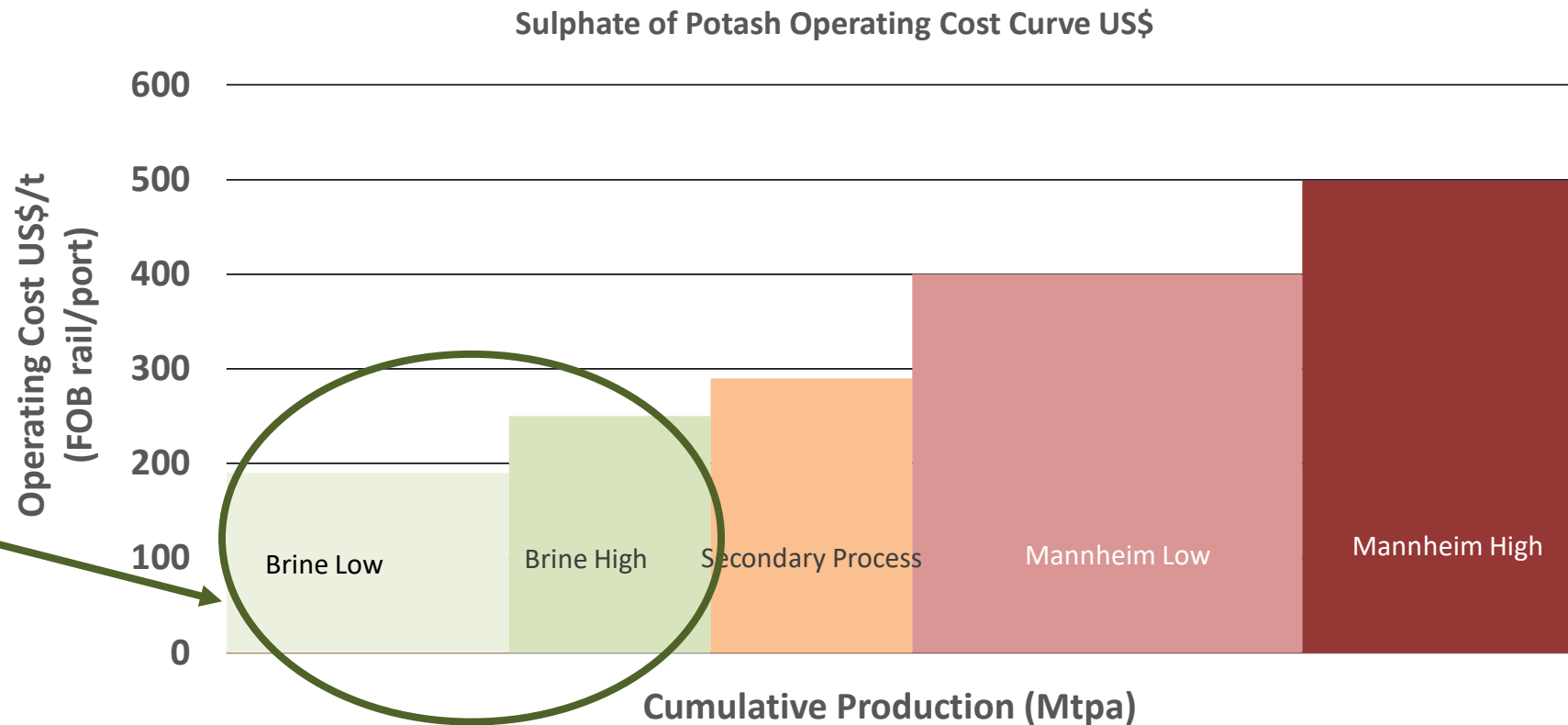
Source: This content was extracted from the Green Markets report, Global Sulfate of Potash Market 2016-2026. This content is republished here with the express written permission of Kennedy Information, LLC. Copyright ©2016. Further use of, electronic distribution or reproduction of this material, requires the permission of Kennedy Information, LLC.



## SOP is produced in three main ways:

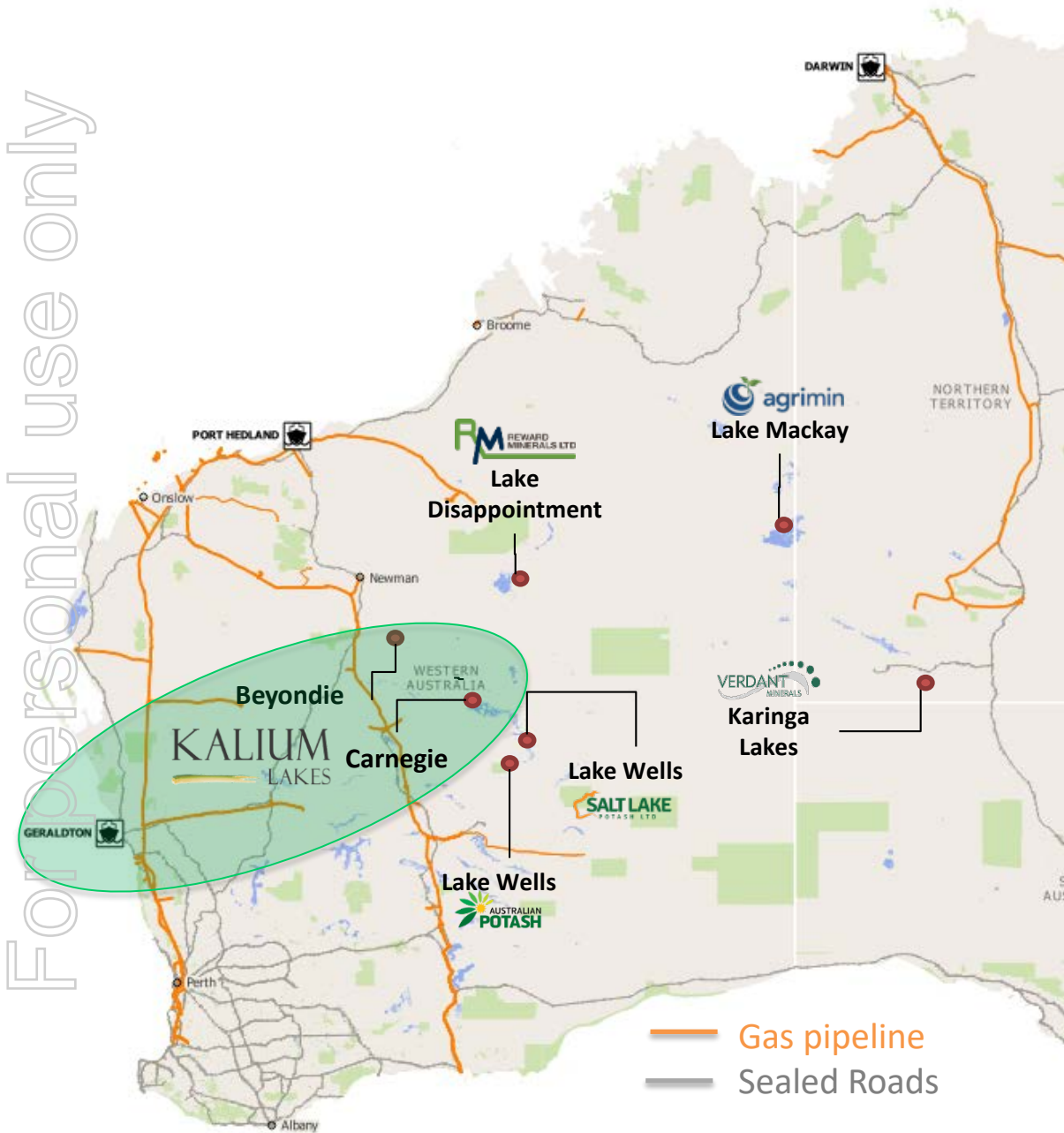
- Salt lake brine processing via evaporation and purification
- **Secondary Process - reaction of MOP with sulphate salts**
- Mannheim Process - reacting MOP with sulphuric acid to produce SOP and hydrochloric acid

*Existing Brine Producers have a competitive cost of production advantage as evaporation is the lowest cost SOP production method world wide*



Source: Company Reports, Company Research, Websites, CRU, Integer, Green Markets

# Strategic Location to Existing Infrastructure



**Kalium Lakes is ideally located, providing a logistical, cost and competitive advantage:**

- Close proximity to existing road and gas pipeline infrastructure **reduces capital** requirements
- Gas for power and boilers provides a cheaper fuel source **reducing operating cost** compared to diesel
- Easy trucking distance to Geraldton Port provides **favourable transport costs** and logistics benefits
- Geraldton Port provides easy access to local and export markets
- Short distance to Newman for support services and air transport



# Extensive Hydrogeological Data Collection

An extensive hydrogeological data collection program has been undertaken, comprising:

- 336 auger hole locations across all of the lakes
- 1,105km of geophysical traverses
- 22 diamond/air core drill holes to collect geological samples and confirm consistent grade with depth
- 4 large 200-250mm diameter cased test bores
- 13 mini aquifer tests
- 3 successful constant rate pumping and recovery tests
- 5 million litres of brine have been pumped from the aquifers
- 20 monitoring bores installed

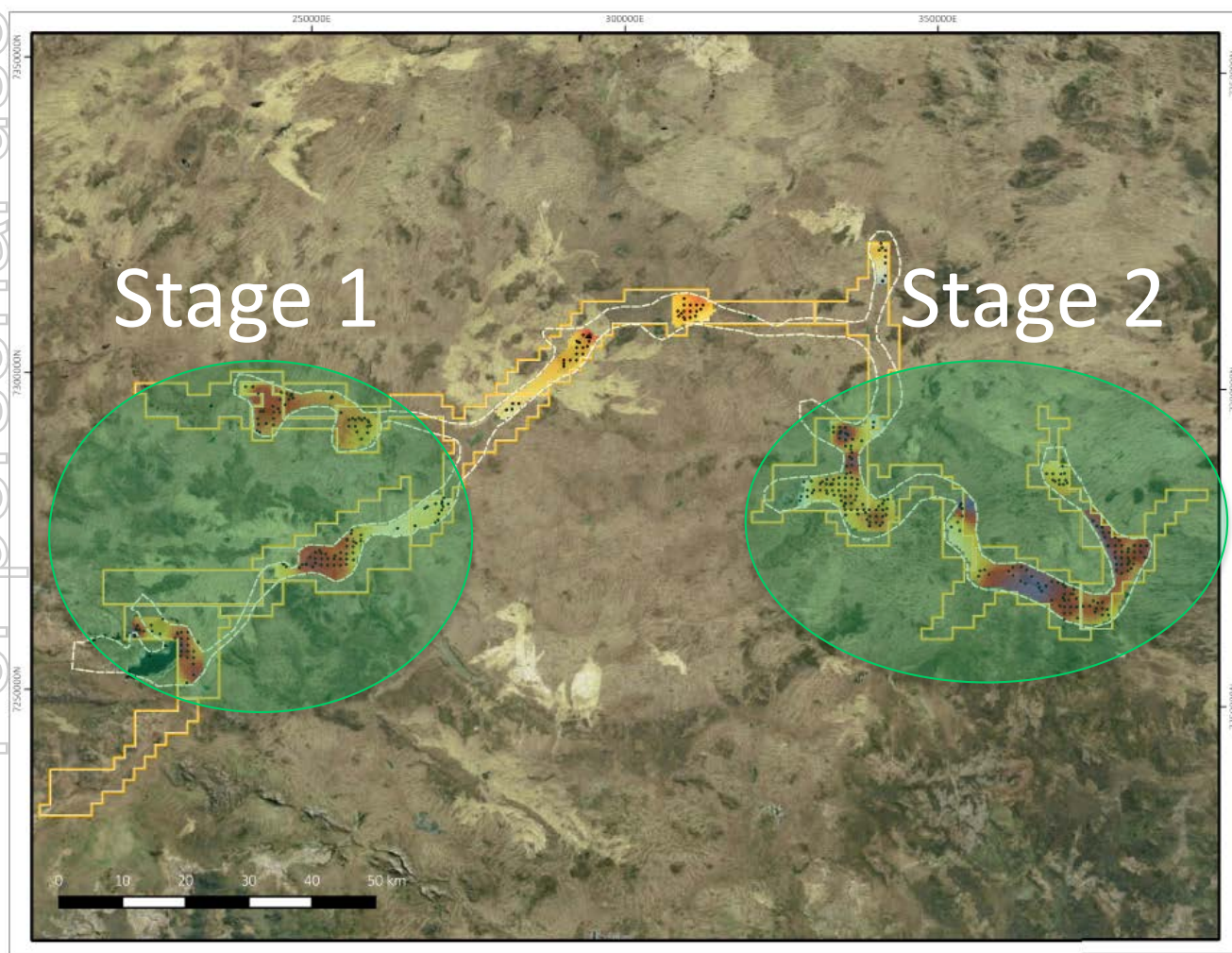


# Extensive High Grade Potassium Zones

## High grade potassium zones in the west and east enable:

- Staged start up commencing in west then expanding production in the east
- Lower extraction volumes and evaporation pond footprint **reducing CAPEX & OPEX costs**

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Lake	K Grade (mg/l)	SOP Grade (mg/l)
Beyondie	4,897	10,913
10 Mile	7,068	15,751
Sunshine	6,851	15,267
Yanneri	6,466	14,409
Terminal	5,987	13,342
West Central	5,145	11,466
East Central	6,462	14,400
White Lake	7,617	16,974
Aerodrome	7,675	17,104

Stage 1

Stage 2



## Mineral Resource and Exploration Target – Drainable Brine

JORC / CIM Resource	Drainable Brine Volume (M m <sup>3</sup> )	K Grade (mg/l)	K (Mt)	SO <sub>4</sub> (Mt)	Drainable Brine SOP (Mt)
Indicated Resource	58	7,145	0.42	1.38	0.9
Inferred Resource	1,396	6,051	8.45	24.06	18.8
Exploration Target	1,440 – 3,518	1,100 – 4,515	1.58 – 15.89	2.72 – 46.06	3.5 – 35.4

*Drainable Brine Mineral Resource complies with the Canadian (CIM, 43-101) standards and guidelines for brine deposits. German consultants K-UTECH have signed off as the Competent Persons.*

## Total Brine Volume (Porosity) Estimates

JORC / CIM Resource	Drainable Brine Volume (M m <sup>3</sup> )	K Grade (mg/l)	K (Mt)	SO <sub>4</sub> (Mt)	Drainable Brine SOP (Mt)
Indicated Resource	428	7,145	3.06	10.08	6.83
Inferred Resource	10,491	6,051	63.48	180.77	141.57
Exploration Target	22,504 – 27,616	1,100 – 4,515	24.75 – 124.69	42.53 – 361.56	55.20 – 278.06

*Total Brine Volume (Porosity) Estimates are provided for comparative purposes with other Australian Listed Companies who do not report Resources on a Drainable Brine basis.*

*Refer to Disclaimer & Compliance Statement. The Kalium Lakes Beyondie Potash Project Exploration Target is based on a number of assumptions and limitations and is conceptual in nature. It is not an indication of a Mineral Resource Estimate in accordance with the JORC Code and it is uncertain if future exploration will result in the determination of a Mineral Resource.*

# Bench and Pilot Evaporation Tests

- Successful Bench Scale Tests conducted in Australia and Germany
- Testwork in Germany has verified initial evaporation pond and purification process design requirements for the production of SOP
- A 26,000 Litre small pilot pond trial was conducted during 2015 demonstrating evaporation rates and salt production
- **150ha trial pond initiative has been approved** by DMP & DER
- 1.5Gt/pa DoW brine extraction licence has been approved



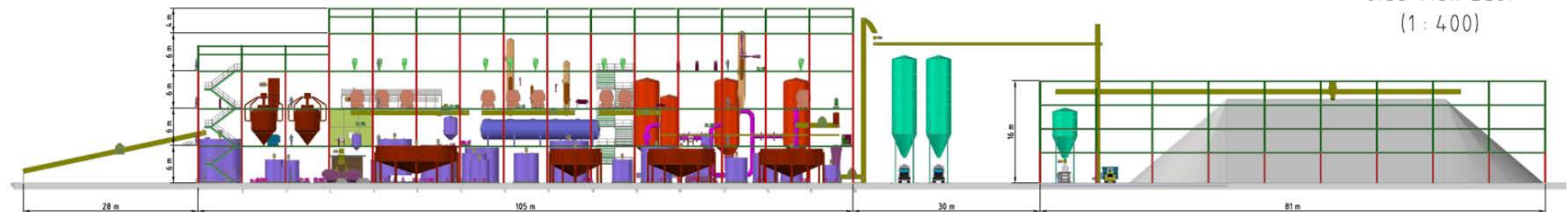
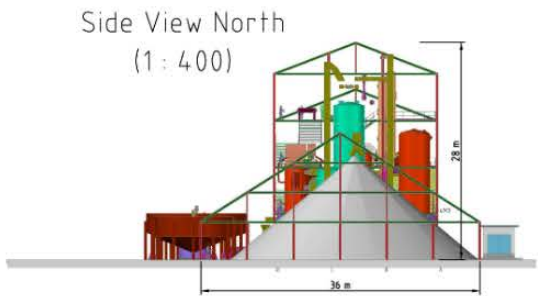
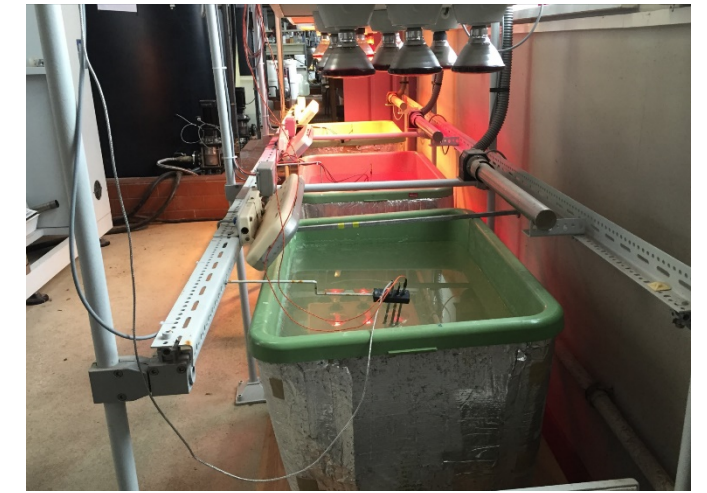


# Pre-Feasibility Study Nearing Completion

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Kalium Lakes has conducted and is updating various technical reports and studies that will form part of the Pre-Feasibility Study (PFS) including:

- Brine Extraction
- Metallurgy and Processing
- Infrastructure Requirements
- Environmental Seasonal Surveys
- Native Title Agreements and Heritage Surveys
- Permitting and Approvals
- Capital and Operating Costs Estimates for a Range of Operational Sizes



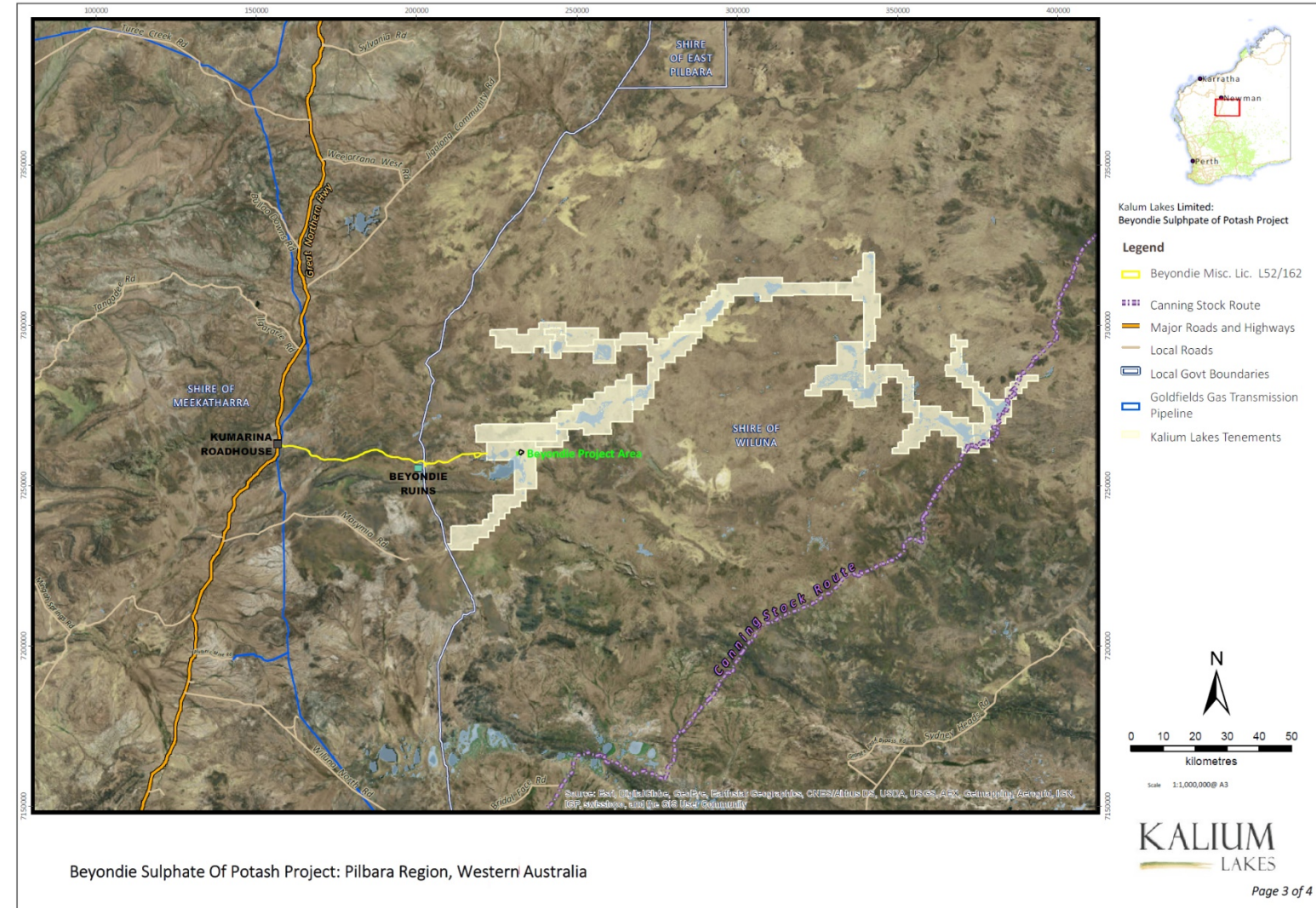
Side View East  
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## The Project Comprises:

- A combination of shallow trenches and deep production bores
- Staged evaporation ponds
- Purification plant
- Product and waste storage areas
- Administration, utilities and facilities
- Accommodation facility
- 78 km access road to sealed Great Northern Highway
- 78 km to Goldfields Gas Pipeline
- Export via Geraldton Port

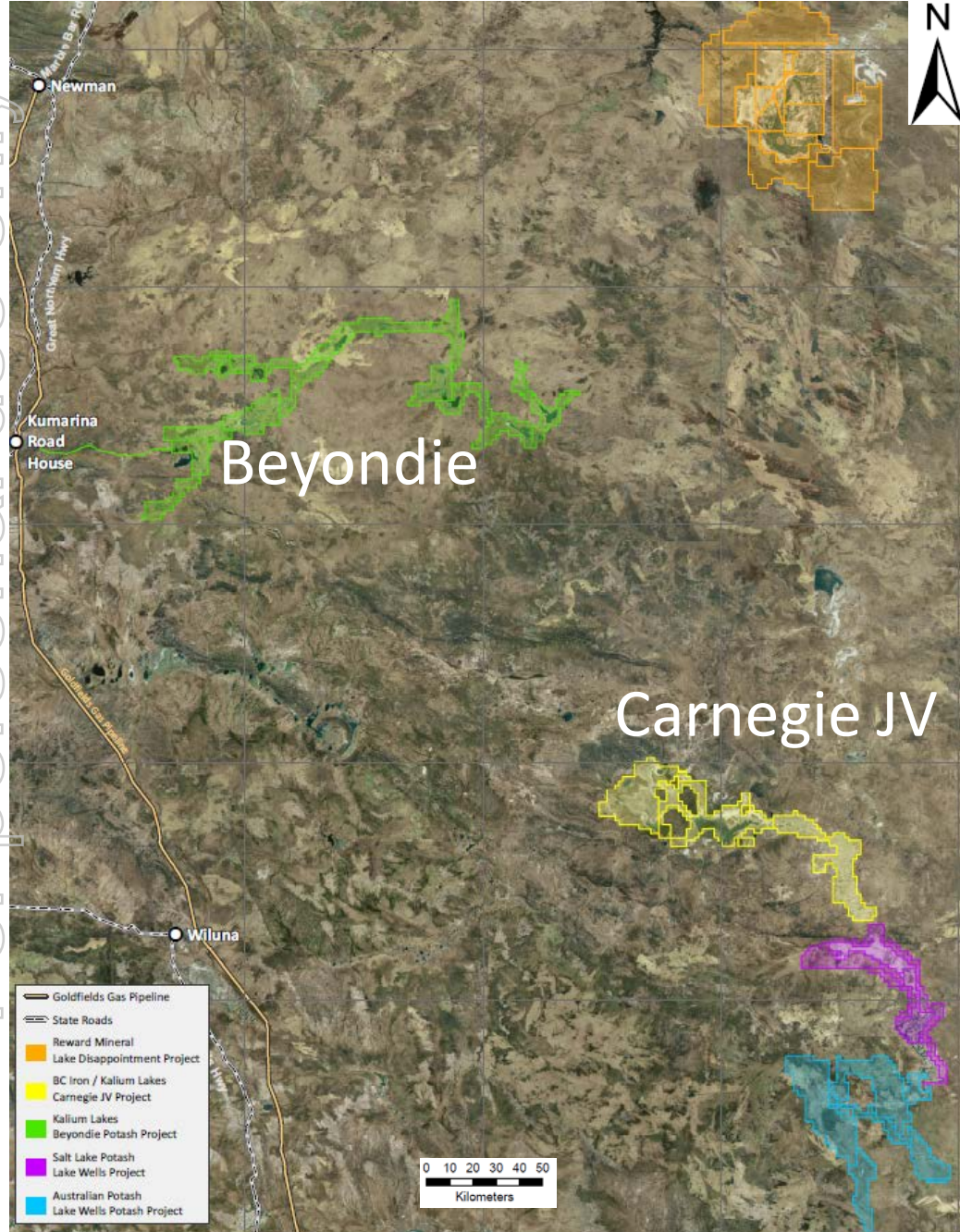




- 1. Continue Final De-risking of the Project**
- 2. Minimise Initial Capital Requirements**
- 3. Provide Early Cashflow**
- 4. Capture the Australian Market Demand**
- 5. Expand with the Market**

The project development pathway is defined by :

- Pre-Feasibility Study Completion
- Pilot Scale Development
- Feasibility Study
- Project Financing
- Full Scale Project Development – reviewing production scenarios between 75-150ktpa SOP
- Project Expansion & Enhancement – reviewing production scenarios to double output to 150-300ktpa SOP



## BC Iron and Kalium Lakes have entered into a JV on the Carnegie Potash Project (CJV):

- Scoping Study Phase (Stage 1), BCI can earn a 30% interest by sole funding \$1.5M
- Pre-Feasibility Study Phase (Stage 2), BCI can elect to earn a further 10% interest by sole funding a further \$3.5 Million
- Feasibility Study Phase (Stage 3), BCI can elect to earn a further 10% interest by sole-funding a further \$5.5 Million
- By end of Feasibility Study CJV would have an ownership of 50% KLL, 50% BCI
- **CJV has a larger footprint in the same area as Salt Lake Potash (SO4) and Australian Potash Limited (APC) to the south**
- CJV will leverage Beyondie Intellectual Property to fast track work and look to duplicate design to minimise costs and rework



# Capital Structure

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Capital Structure Post IPO	Shares
Cash at End of December Quarter	\$6.1m
Shares on Issue	121.8m
Current Share Price (30-3-2017)	\$0.41
Market Cap	\$49.9m
Performance Rights	20.0m
Management Options	7.5m
Advisor Options	1.5m

Major Shareholders	
Agricultural Investors	51%
Directors & Management	14%
Other Investors	35%

- The Performance Rights are divided into three tranches, vesting on reaching the following milestones: completion of a DFS, securing project finance, and achieving commercial production of SOP
- Each Management Option has an exercise price of 25 cents per share, and an expiry of three years from its issue date
- A 1.9% royalty on SOP production is payable to the founders



## Why Kalium Lakes?

- ✓ Highest Grade in Australia
- ✓ Location, Location, Location
- ✓ Most Advanced Project in Australia
- ✓ Proven Development Team



# Reference Slides



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**Malcolm Randall, Non-Executive Chairman (B.Chem, FAICD)**

An experienced company director and chairman with extensive experience in corporate management and marketing in the resources sector. Mal's experience extends over a broad range of commodities both in Australia and internationally



**Brett Hazelden, Managing Director (B.Sc, MBA, GAICD)**

A Metallurgist who brings more than 20 years of experience, in project management, engineering design and operations serving the Australasian resources industry. Brett has been involved in a broad range of commodities including numerous mergers, acquisitions and due diligence reviews



**Rudolph van Niekerk, Chief Development Officer / Executive Director (B.Eng, GAICD)**

A Mechanical Engineer with more than 12 years experience in project management, operations, construction, commissioning, production ramp-up and project hand-over. Rudolph has a broad range of commodities experience both in Australia and internationally



**Brendan O'Hara, Non-Executive Director (B.Juris, LLB, SS Fin)**

A former legal practitioner of the Supreme Court of WA and member of the Business Law Section of the Law Council of Australia. Brendan's previous roles include eight years as Executive Chairman of ASX-listed Summit Resources Limited, and State Executive Director of the ASX








# Peer Comparison

Utilising CIM Brine Standard	✓	✓	?	X	✓
>15Mt CIM/JORC SOP <u>Drainable</u> Resource	19.8 Mt	23.2 Mt	153 Mt	?	18.4 Mt
High Grade Brine Resource > 10 kg/m <sup>3</sup> SOP	13.6	8.3	11.4	8.7	8.2
Na:K (Waste: Ore Ratio) < ~10:1	8.9	?	15.2	21.5	17.6
SOP Production Estimates	75-300 kt pa	370 kt pa	400 kt pa	200-400 kt pa	150-300 kt pa
In-situ Palaeochannel <u>and</u> playa lake brine sources	✓	X	X	✓	✓
Extraction Method	15-60 Bores & 15-70km Trenches	250 km Trenches Only	200km Trenches Only	107-164 km Trenches & 38 Bores	35-70 Bores Only
Brine Extraction Volume < 30 GL pa	8-30 GL pa	66.5 GL pa	60-70 GL pa	32-64 GL pa	17-37 GL pa
Pumped >5 million litres of Brine	✓	?	?	?	✓
Evaporation Ponds	<u>Off Lake</u>	On Lake	On Lake	On Lake	On & Off Lake
Evaporation Rate (estimated)	3,600 mm pa	3,400 mm pa	3,600 mm pa	3,100 mm pa	3,100 mm pa
Potassium Recovery	60-70%	69.3%	?	70%	51.5%

Source: Company Reports, Company Research, Websites, Broker Research

# Peer Comparison

					
Environmental Disturbance <20km <sup>2</sup>	~5-18 km <sup>2</sup>	~59 km <sup>2</sup>	~75 km <sup>2</sup>	~29-32 km <sup>2</sup>	~13-25 km <sup>2</sup>
Project < 80km from sealed road	78 km	590 km	355 km	195 km	168 km
Project < 80km from gas pipeline	78 km	400 km	175 km	245 km	245 km
Project < 900km by road from Port	700 or 862km	2,000 km	877 or 1,371 km	968 km	940 km
MoU in place with Port	✓	✗	✓	✗	✗
Native Title Mining Agreement signed	✓ ✗ (1 of 2)	✗	✓	✗	✗
Approval to commence large scale trial	150ha of ponds	✗	✗	✗	✗
Scoping Study Complete	✓	✓	✓	✓	✓
Initial Capex A\$M	Update Pending	\$346 M	\$320 M	\$224 M	\$175 M
Operating Costs (FOB) A\$/t SOP	Update Pending	\$369 /t	\$328 /t	\$241 /t	\$368 /t
Mine Life	Update Pending	20 years	13 years	20 years	20 years
Market Cap (30 March 2017)	\$49.9 M	\$70.6 M	\$55.6 M	\$67.0 M	\$26.5 M

Source: Company Reports, Company Research, Websites, Broker Research