

# POTASH

## INVESTMENT OPPORTUNITIES

WORLD-CLASS RESOURCE PROVINCE | SECURE INVESTMENT LOCATION  
WORLD-LEADING GEOSCIENTIFIC DATA | GLOBAL MINING SERVICES INDUSTRY

### Mines, deposits and prospects

- Potash from playa-lake brine
- Potash in glauconite-rich sedimentary rock
- Potash in alunite
- Potash in ultrapotassic rock
- Highway
- Town



### Western Australia produces first potash from brine in 2021

- Western Australia is well positioned to take advantage of the current high demand for potash from both domestic and international markets
- The two most common forms of potash are:
  - Sulfate of Potash (SOP) – potassium sulfate ( $K_2SO_4$ )
  - Muriate of Potash (MOP) – potassium chloride (KCl)
- SOP is a premium potash fertilizer unlike MOP which can be harmful to plants. SOP is used primarily on high-value crops, usually leafy plants, fruits and vegetables
- Western Australia has eight brine potash projects with resources all planning to produce SOP by pumping potassium-rich brine into ponds with potassium salts crystallizing by solar evaporation, then harvesting and processing
- Development of SOP projects in Western Australia most recently focuses on playa-lake brine deposits, with several globally significant resources identified including Beyondie, Lake Way, Kumpupintil Lake, Lake Wells and Mackay
- Commissioning of the Beyondie SOP plant is underway with first production announced in October 2021
- Early works have started at the Mardie Salt + Potash Project which will produce 5.35 Mtpa of NaCl and 140 ktpa of SOP from seawater
- New discovery at Lake Throssell, with SOP grades up to 14 500 mg/L and a maiden resource estimate recently announced
- The strategic importance of developing these large-scale brine projects is recognized by the State Government, which in 2019, introduced a concessionary rental rate for mining leases (deriving minerals from brine) to reduce the fixed cost imposed by government to a level more comparable with other conventional mining operations

183  
Full-time  
employees



\$1788 m\*  
Investment  
projects



5.0%  
Royalty  
rate



(2020–21 financial year)

\* Includes projects planned, possible, committed or under construction as of October 2021



## Potash resources ranked by drainable resources of SOP(Mt)

Resources estimated according to JORC 2012

Project	Status	Owner	Drainable resource SOP (Mt)	Grade SOP (mg/L)	Drainable resource K (kt)	Grade K (mg/L)
Kumpupintil Lake	Feasibility	Reward Minerals	153.0	11 350	68.6	5090
Mackay	Feasibility	Agrimin	123.3	7 326	55.3	3285
Beyondie	Operating	Kalium Lakes	31.4	13 465	14.8	6038
Lake Wells	Feasibility	Australian Potash	18.1	7 455	8.1	3343
Lake Throssell	Exploration	Trigg Mining	14.4	10 400	64.0	4665
Lake Way	Under development	Salt Lake Potash <sup>1</sup>	11.4	15 200	5.1	6800
Lake Rason	Exploration	Trigg Mining	5.9	5 080	2.7	2290
Carnegie	Pre-feasibility	Kalium Lakes / BCI Minerals	0.9	7 724	0.4	3466

<sup>1</sup>Went into voluntary administration in 2021

Project	Status	Owner	Resources (Mt)	Av. grade K <sub>2</sub> O (%)	Contained K <sub>2</sub> O (Mt)
Dinner Hill	Inactive		910.0	3.81	34.7
Oxley	Feasibility	Centrex Metals	154.7	8.30	12.8
Lake Chandler*	Exploration	Lake Chandler Minerals	5.8	5.73	0.3

Resource estimates have been rounded  
\* Compliant with JORC 2004



Potash from playa-lake brine



Potash in glauconite-rich sedimentary rock



Potash in ultrapotassic rock



Potash in alunite

### Potash resources in Western Australia

- Another common source of potash is glauconite in sedimentary greensands. The principal resource is within the Perth Basin (Dandaragan Trough potash – phosphate project)
- Additional potash resources are associated with alunite at Lake Chandler
- An unusual potassium resource occurs in feldspar in Proterozoic ultrapotassic microsyenite at Oxley in the Moora Basin. The proposed product is potassium nitrate (KNO<sub>3</sub>)
- Historical production of potash in Western Australia targeted alunite-rich clay deposits at Lake Chandler (9218 t of crude potash) and Kanowna (production not recorded), carried out mainly during World War II



Grader and header operating at the Beyondie SOP project  
(Image courtesy of Kalium Lakes Ltd and the Northern Australian Infrastructure Fund)

#### For more information



Geological Survey of  
Western Australia

[www.dmirs.wa.gov.au/gswa](http://www.dmirs.wa.gov.au/gswa)



[www.dmirs.wa.gov.au/minedex](http://www.dmirs.wa.gov.au/minedex)



[www.dmirs.wa.gov.au/geoview](http://www.dmirs.wa.gov.au/geoview)

#### Contact us

Sarah Sargent

Geological Survey and Resource Strategy Division

Email: [minerals.investors@dmirs.wa.gov.au](mailto:minerals.investors@dmirs.wa.gov.au)

Tel: +61 8 9222 3890



Government of Western Australia  
Department of Mines, Industry Regulation and Safety

December 2021

Geological Survey of  
Western Australia

