

# REWARD MINERALS LIMITED



*Aiming to develop the  
longest-life brine SOP  
Project outside of China*

***AGM Presentation***  
***30 May 2018***



ASX | RWD  
[www.rewardminerals.com](http://www.rewardminerals.com)



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- ▶ **Reward Corporate Snapshot**
- ▶ **2017 Highlights**
- ▶ **LD Project PFS Results**
- ▶ **PFS Feedback and Responses**
- ▶ **Conclusions**

# REWARD CORPORATE SNAPSHOT



## Capital Structure 29 May 2018 ASX:RWD

Ordinary Shares on Issue	135.8m
Rights and Options on Issue	4m
Share Price	\$0.195
Undiluted Market Capitalisation	\$26.5m
Short Term Debt	A\$1.0m
Net Cash & Equivalents <sup>1</sup>	~A\$1.7m
Undiluted Enterprise Value	A\$25.8m

## Major Shareholders

Name	Shares (m)	%
Michael Ruane	34.3	25.2
Intermin Resources	6.0	4.4
Top 20 Shareholders	68.8	50.6



# 2017 HIGHLIGHTS



## *A challenging, yet successful year*

- ▶ Permitting
  - ▶ Environmental Review Document submitted
  - ▶ Culmination of 5 years of work
  - ▶ Ongoing engagement with regulators
- ▶ Pre-Feasibility Study
  - ▶ CPC replaced Lycopodium – progressed rapidly up the learning curve
  - ▶ Completed post year-end – benchmark study, conservative, yet excellent results
  - ▶ Independent review of mass balance and flowsheet by Ercosplan Ingenieurbüro
- ▶ Site Works
  - ▶ 2 x 1 kilometre trench pumping trials – excellent modelling data generated
  - ▶ Evaporation pond trials
  - ▶ Process water borefield definition and ongoing environmental field work

# LD PROJECT PFS RESULTS<sup>1</sup>



## Production:

- ▶ Over 9 Mt SOP produced at over 400,000 tpa
- ▶ 27-year LOM, based on extraction of only 6% of current resource

## Costs:

- ▶ Capex – A\$345M, incl. indirects and owners costs (+/-20% accuracy)
- ▶ Total Capex – A\$451M, incl. contingency and pre-production costs
- ▶ AISC Opex – A\$394/tonne

## Economics:

- ▶ Pre-tax NPV<sub>8%</sub> – A\$460M, IRR – 18%
- ▶ LOM Revenue A\$6 billion, EBITDA A\$2.5 billion
- ▶ Average EBITDA Margin – 42%, A\$110M/year
- ▶ A\$286M in Royalties to the State and the Martu People

# LD PROJECT PFS RESULTS CONTINUED<sup>1</sup>



## Process:

- ▶ Over **40 phases** of metallurgical testwork completed
- ▶ ERCOSPLAN independent review of mass balance and flowsheet:
  - ▶ **“State of the art”**

## Timing:

- ▶ **3¼-Year** development period
- ▶ **One year** production ramp-up

## Life extension:

- ▶ **Excellent potential** to increase production and extend life **from bores on LD**

***“The LD SOP Project is technically sound and economically robust”***

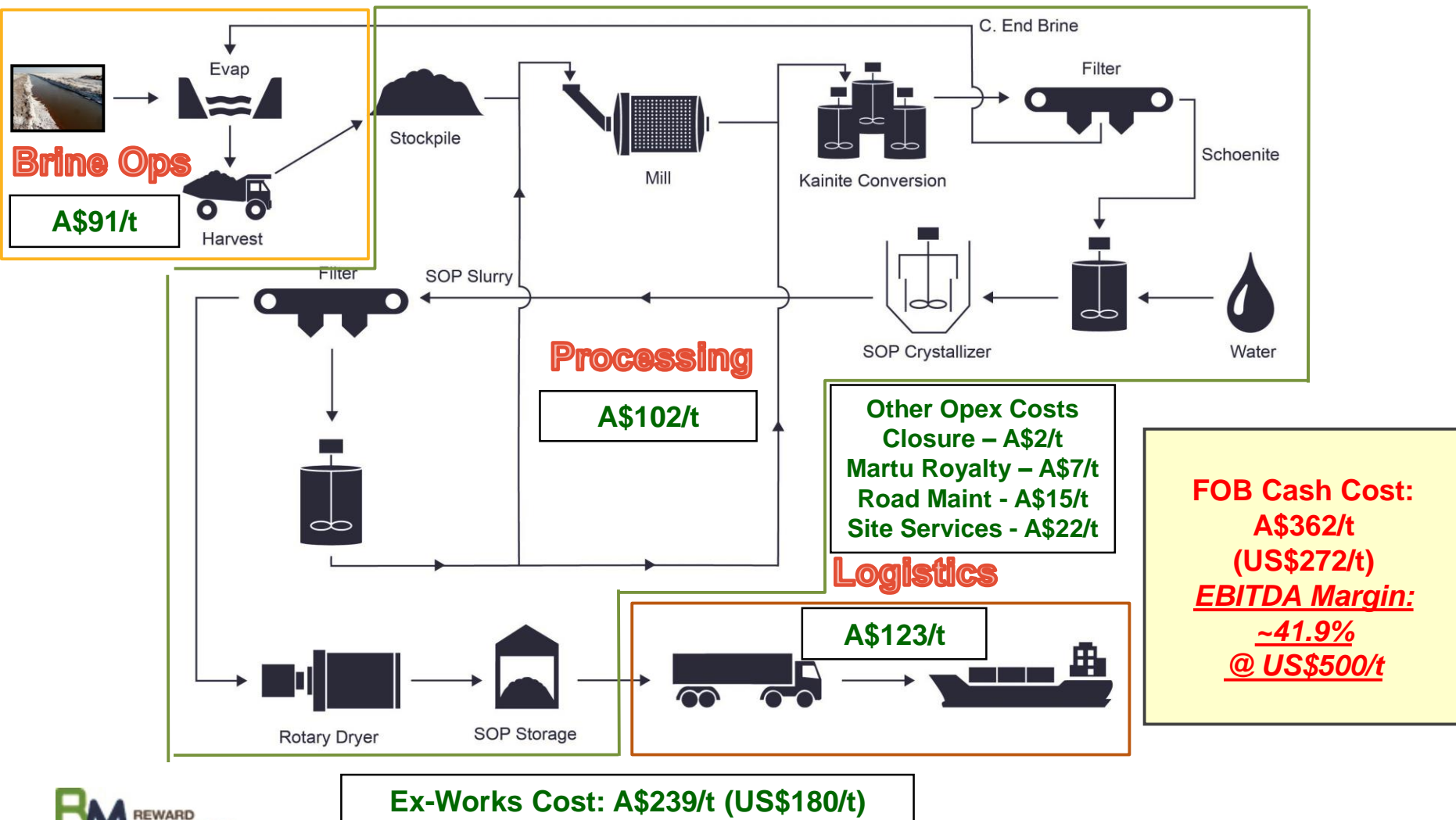
# PFS RESULTS – CAPITAL COSTS<sup>1</sup>



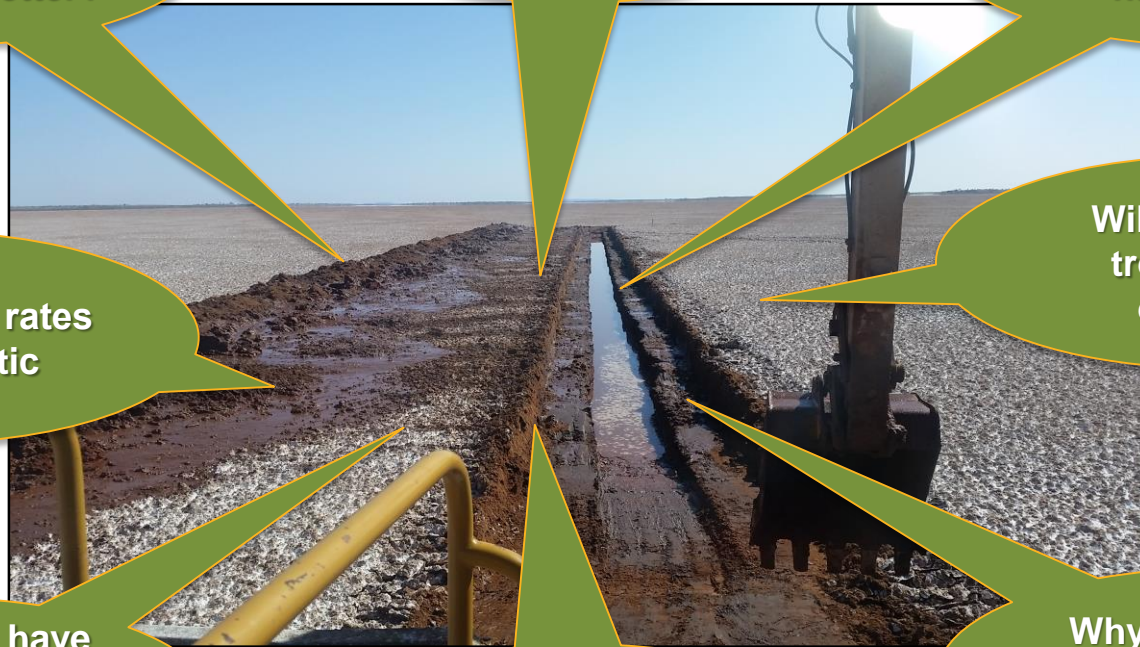
Initial and Sustaining Capital Costs (LOM Real)	AUD M
Production - Trenches and Ponds	57.6
Process Plant	73.2
Infrastructure	108.8
Site Support Temporary Services	2.9
Construction Costs	59.2
<b>Subtotal</b>	<b>301.7</b>
Indirect Costs (EPC, Consultants, Commissioning)	20.0
Owners Costs	23.4
<b>Subtotal</b>	<b>43.4</b>
<b>Total Capital Costs before Contingency</b>	<b>345.1</b>
Contingency	59.9
<b>Total Initial Capital Cost</b>	<b>405.0</b>
Working Capital (Pre-Production Operating Expenses)	45.6
<b>Total Development Capital Cost</b>	<b>450.6</b>



# PFS RESULTS– CASH OPEX COSTS<sup>1</sup>



# PFS FEEDBACK<sup>1</sup>



Your recovery seems low, can't you do any better?

Is this where capex is going to end up for most brine SOP projects?

Why have you not used wet harvesting?

Reward's flow rates are optimistic

Will 133 km of trenches be enough?

You seem to have taken a very conservative approach

How can you have a PFS without a reserve?

Why has Reward escalated its SOP price?

# PFS FEEDBACK – RESPONSES



## ► Recovery – *Agreed!*

- Overall Recovery of 65% assumed, based on testwork
- Losses to seepage and entrainment incorporated into 65% recovery model
- It is conservative, 70 to 75% may be achievable over time

## ► Capex – *Thorough, conservative approach*

- Estimate largely based on competitive tenders
- Enabled +/-20% accuracy and 17% Contingency
- Remote location has a material impact

## ► Flow Rates – *A reasonable assumption*

- Based on long and short-term pump trials
- Trenches across the lake, of varying lengths
- Results varied from 6 to over 100 litres/second/kilometre: 15 l/s/km is reasonable

## ► Reserve/Resource Status – *What does JORC say?*

- “An ‘Ore Reserve’ ..... is defined by studies at Pre-Feasibility or Feasibility level as appropriate...”



► With the PFS completed, Reward can now address LD's reserve status

# PFS FEEDBACK – RESPONSES CONTINUED



- ▶ Financial Modelling – *Used best practice methodology*
  - ▶ A nominal model used – price and costs are inflated (inflation effects are included)
  - ▶ Ensures correct treatment of depreciation, tax and tax losses
  - ▶ Quarterly periodicity allows accurate assessment of pre-production costs
- ▶ Conservative Approach – *Agreed! Examples:*
  - ▶ Resource grade: 13.4 kg/m<sup>3</sup> SOP, pumped grade: 10 kg/m<sup>3</sup> SOP
  - ▶ Pumping trials to date: 12 to 13 kg/m<sup>3</sup> SOP
  - ▶ Royalty: 3.5% ad valorem (\$25/t @ US\$500/t) versus A\$0.73/t flat rate
- ▶ Trench Length – *Not a critical cost driver, however:*
  - ▶ 15 l/s/km x 133 km delivers required 63 Glpa
  - ▶ But higher grade ➡ lower volume ➡ less trench
  - ▶ Or, higher volume ➡ less trench
- ▶ Wet harvesting – *6 years and waiting...*
  - ▶ *Reward began investigating wet harvesting in 2012!*

} *Both are possible*

# NEXT STEPS<sup>1</sup>



## Funding

- ▶ Progress discussions with potential strategic partners

## Environmental Assessment

- ▶ Address EPA comments/questions
- ▶ Finalise ERD for public review

## Project Enhancements

- ▶ Further R&D on process flow and pond design & construction will deliver benefits
- ▶ Assess contractor consolidation options
- ▶ Investigate alternative logistics solutions, finalise wet harvesting evaluation
- ▶ Continue trench pumping, evaporation and seepage trials

## Resource Update

- ▶ Hydrogeological model update to feed into resource update/reserve definition

## Build Corporate Depth and Capability

- ▶ Develop the team to ensure Reward is able to fund, permit, design and develop LD

# CONCLUSION



***Reward is clearly positioned for a significant re-rating...***

## **The PFS has shown that the LD Project is Technically Sound**

- ▶ Conservative PFS conducted to exacting standards (+/-20% accuracy)
- ▶ Successful independent process review completed (ERCOSPLAN)

## **... and Economically Robust**

- ▶ Pre-tax NPV<sub>8%</sub>: A\$460 M
- ▶ EBITDA margin 42%, generates A\$110 M/year
- ▶ With the scope to improve economics on multiple fronts

## **... and at 407,500 tonnes SOP/annum**

- ▶ Will be one of the world's largest, longest-life brine SOP Projects
- ▶ Located in a great mining jurisdiction
- ▶ With the potential to substantially increase scale and extend life



# *APPENDICES*



# EXPERIENCED BOARD & MANAGEMENT



## Board & Corporate

### **Colin McCavana – Non-Executive Director, Chairman**

- 30+ years experience in mining and earthmoving industries including the management, acquisition and development of projects in Australia and overseas
- Founder and Managing Director of Haddington Resources Ltd
- Chairman of Northern Minerals Ltd

### **Rod Della Vedova – Non-Executive Director**

- Extensive experience in the Solar Salt industry including 11 years as Chief Chemist and 24 years as Process Superintendent for Dampier Salt Ltd (Rio) for Karratha Hedland operations
- Background in large scale commercial production of salt by solar evaporation techniques
- BSc in Chemistry, Post Graduate in Chemical Engineering

### **Michael Ruane – Director**

- 30+ years in chemical and metallurgical fields including senior technical advisor and manager at Lake McLeod Potash operation in WA, as well as Manager of mining operations in WA and the Northern Territory
- PhD (Chemistry) MRACI

### **Greg Cochran – Chief Executive Officer**

- experienced international, C-suite mining executive
- previously MD of Deep Yellow Ltd, CEO of Terramin
- M Sc. Mining Eng. & Mineral Economics, MBA
- FAusIMM, Graduate Member AICD

### **Bianca Taviera – Company Secretary**

- an experienced Company Secretary working for a number of ASX Listed Resource companies

## Project Development

### **Daniel Tenardi – Projects Director**

- 25+ years mining experience with various organisations including Alcoa, Rio Tinto and BHP from start-up to completion phases
- Extensive mine and project management experience
- BSc in Mathematics, Unrestricted QM Ticket

### **Geoff Browne – Consultant Metallurgist**

- 40+ years experience in technical mineral processing and water treatment (biological, patented ballasted flocculation, cyanide detoxification) including plant design/operation
- B.App.Sc, Grad Dip (Metallurgy), MAusIMM, PhD (PH)

### **Bob Kinnell – Consultant Geohydrologist**

- geoscience management professional with over 20 years' experience in tier 1 mining, professional services and consulting firms
- extensive experience in water supply, dewatering and brine production in South America, Australia, Asia, Europe and Africa
- BEng (Hons) PGCert MSc FGS MAusIMM

### **Andy Fuchs – Chemical Engineer**

- Extensive international experience within the resource industry covering studies, detailed design, commissioning and operation reviews for a wide range of commodities
- B.Eng(Chemical)(1st Hon)

### **Corporate Consultant:**

### **Dev Ramachandran – Market Specialist**

- senior mining executive with extensive global fertiliser minerals experience



# GLOBALLY SIGNIFICANT TIER 1 RESOURCE



LD's Drainable SOP Resource dwarfs all Australian deposits  
(...it has the highest average in-situ grade...)

Hydrostratigraphic Unit	Unit Symbol	Nominal Dimensions (m)			Volume (m <sup>3</sup> x 10 <sup>6</sup> )	Area (m <sup>2</sup> x 10 <sup>6</sup> )	Assigned Specific Yield Effective Porosity (%)	SOP Brine Grade (kg/m <sup>3</sup> ) <sup>(1)</sup>	Drainable SOP (Mt)	JORC Resource Status
		Top	Base	Thick.						
Upper lake bed sequence	Qhs & Qhl	0.5	2	1.5	1,123.5	749.0	15	13.4	2.26	Indicated
Lower lake bed sequence	Qpl	2	6	4	2,996.0	749.0	13	13.4	5.22	Indicated
Weathered basement	PUw	6	80	74	55,426.0	749.0	12	11.2	74.49	Inferred
Weathered basement (sandy sections)	PUw	80	90	10	6,987.0	698.7	22	11.2	17.2	Inferred
Estimate - Accessible Zone					66,532.5			11.34	99.2	
Upper lake bed sequence (Exclusion zone)	Qhs & Qhl	0.5	2	1.5	738.0	492.0	15	13.4	1.48	Indicated
Lower lake bed sequence (Exclusion zone)	Qpl	2	6	4	1,968.0	492.0	13	13.4	3.43	Indicated
Weathered basement	PUw	6	80	74	36,408.0	492.0	12	11.2	48.93	Inferred
Estimate - Exclusion Zone					39,114.0			11.37	53.8	
Total Estimates					105,646.5			11.35	153.0	

- Notes:
1. Total area of the lake: 1,241km<sup>2</sup>
  2. Total area of the accessible zone: 749km<sup>2</sup>
  3. Total area of the exclusion zone: 492km<sup>2</sup>
  4. Figures have been rounded to 2 significant numbers
  5. Resource compliant with CIMM and draft AMEC guidelines



LD offers *lower resource risk, long life and scalability*

Refer to ASX Announcement dated 7 February 2017 for full details of the Mineral Resource

# BRINE SOP CRITICAL SUCCESS FACTORS



## Critical Success Factors for Brine-based SOP Operations

### Geology

- Current producers operate from **large, single deposit, long-life operations**
- Simple geology, **consistent depositional environment** required

### Operational Environment

- High **evaporation** rates **all year round**
- Relatively low rainfall (recharge)
- **Seepage**

### Grade and Brine chemistry

- **Grade drives volume and pond size**
- Chemistry – by-products and waste

### Specific Yield

- Flow rates drive volume
- Volume drives trench length/no. of bores

### Jurisdiction

- Ultra long life assets need a **stable political environment**
- **Consistent, transparent** and world class **regulation**

### Logistics

- In MOP or SOP, logistics typically make up **20% to 30% of FOB cost**

### Catchment Area

- Complimentary to precipitation when considering recharge

### Social Licence

- **Community support** fundamental
- **ILUA – Transparent terms** essential from an investor perspective

# OPERATIONAL ENVIRONMENT – 1



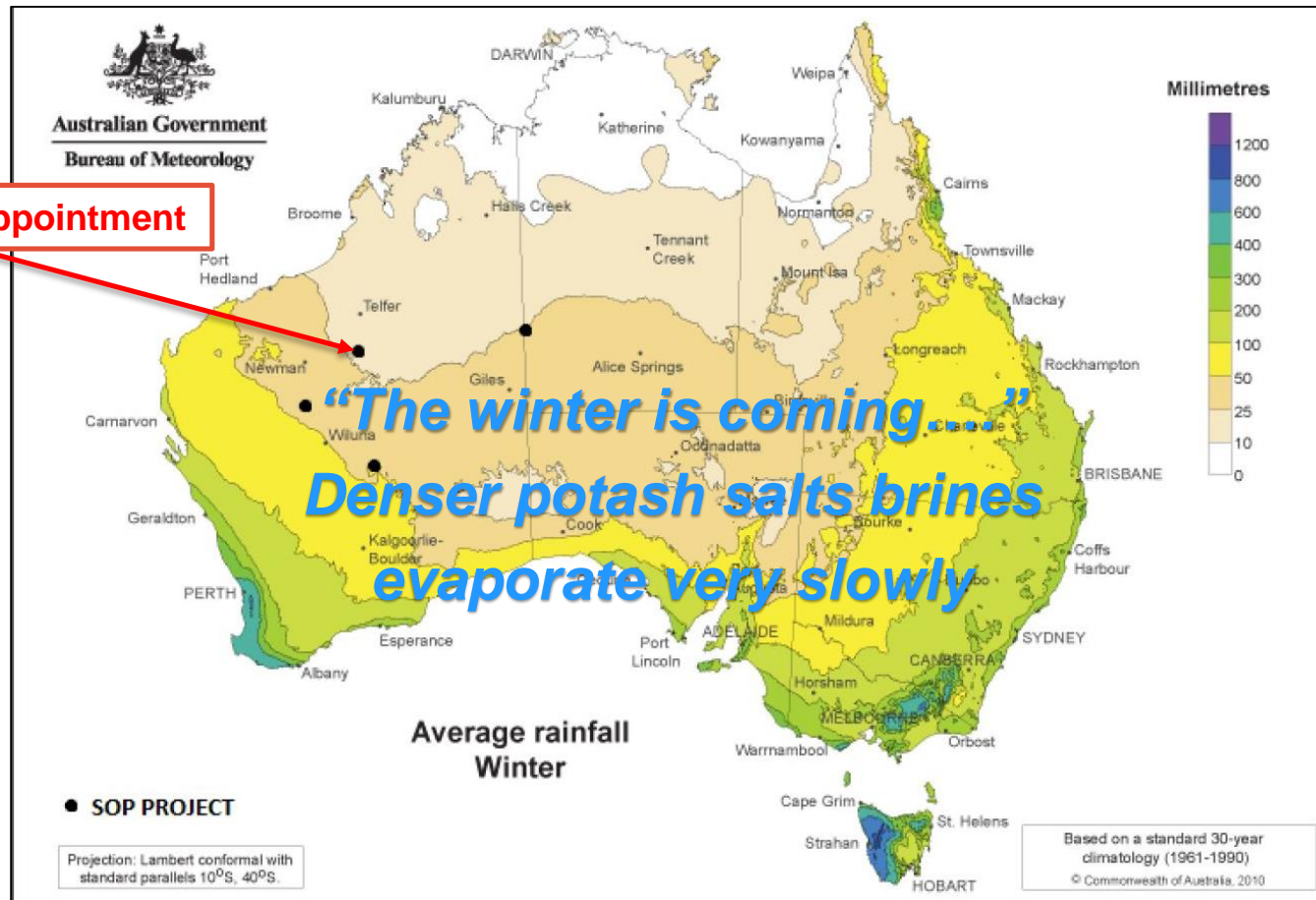
Year-round evaporation is critical, not just the average.....



# OPERATIONAL ENVIRONMENT – 1



**Rainfall** is useful for recharge, but not welcome in winter.....



# COMPETENT PERSON STATEMENT



This information in this report that relates to Resource Estimation and hydrogeology is based on information compiled by Mr Robert Kinnell, a hydrogeologist and Competent Person who is a Member of The Australian Institute of Mining and Metallurgy and a Fellow of the Geological Society of London. Mr Kinnell is employed by Strategic Water Management and is a consultant to Reward Minerals and has 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Kinnell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this presentation that relates to Brine and Sediment Assays and Analyses is based on information compiled by Mr Geoff Browne, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Browne is a consultant to Reward Minerals Ltd. Mr Browne has 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Browne consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

## Notes

Please refer to the assumptions, sensitivities, risk factors and cautionary statements contained in ASX Announcement dated 1 May 2018, titled "PFS Confirms LD Project as a Globally Significant SOP Project" for details disclosed respectively in Table 2 (pages 4-6), Table 3 (pages 7-8) and on pages 12 and 13 of that announcement, as well the details included in the PFS Executive Summary appended thereto, which may adversely impact upon the information and forecasts in this announcement.

Refer to ASX announcement dated 7 February 2017 titled "Lake Disappointment (LD) Project Confirmed as a Globally Significant Tier 1 Sulphate of Potash Deposit" for full details of the Mineral Resource. The Company confirms that it is not aware of any new information or data that materially affects the information included in the 2017 announcement and that all material assumptions and technical parameters underpinning the resource estimate continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings were presented in the original ASX announcement have not been materially modified.

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