

Developer of the LD Brine SOP Project, the most compelling investment opportunity in the SOP space

Proactive Investors
CEO Presentation
19 November 2018



ASX | RWD www.rewardminerals.com



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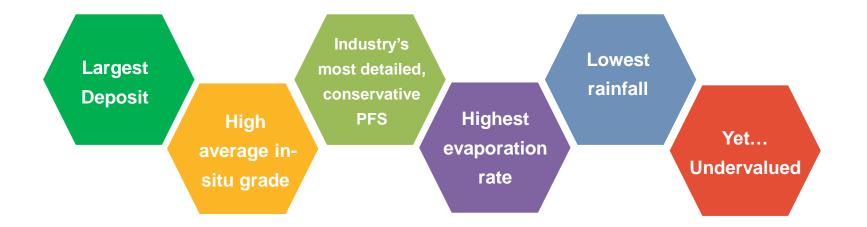
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### INVESTMENT RATIONALE





# Underpinned by a key global investment theme: Feed the world!

The most compelling investment opportunity in the SOP space



## **CONTENTS**



- **►** Corporate Snapshot
- **► SOP Market Introduction**
- **► LD Project Overview & Metrics**
- Current Activities
- **▶** Conclusions



## **CORPORATE SNAPSHOT**



#### Capital Structure 31 Oct 2018\* ASX:RWD

Ordinary Shares on Issue	162.1m
Rights and Options on Issue	17.6m
Share Price	\$0.135
Undiluted Market Capitalisation	\$21.9m
Short Term Debt	A\$0.5m
Cash & Equivalents	A\$5.5m
Undiluted Enterprise Value	A\$16.9m

#### **Major Shareholders**

Name	Shares (m)	%
Michael Ruane	51.4	31.8
Intermin Resources	7.2	4.4
Top 20 Shareholders	95.2	58.8



<sup>\*:</sup> As per Quarterly Report released 31 October 2018



## WHAT IS SOP? SULPHATE OF POTASH



#### The <u>Premium</u> source of potassium fertiliser

K<sub>2</sub>SO<sub>4</sub> (44.8% K, 55.2% SO<sub>4</sub>)

- ► A low-chloride source of potassium and sulphur
- ► Potassium is an essential plant macronutrient
- Sulphur is also an important nutrient
- Applied to speciality and/or chloride sensitive crops
- ► SOP supplies less than 10% of the potash market
- ▶ "MOP" (Muriate of Potash, KCI) is the world's major source of K
- ► MOP can contribute to increases in soil salinity
- ► SOP trades at a premium, currently ~US\$300/t > MOP

MOP is a volume business, SOP is a value business





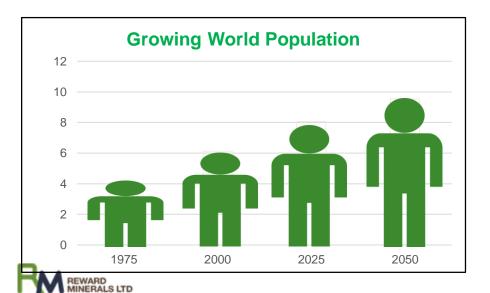


## WHAT IS DRIVING SOP GROWTH?

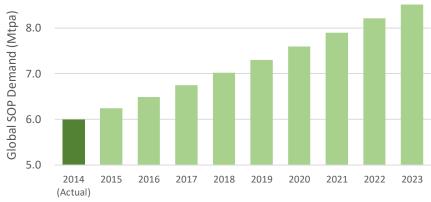


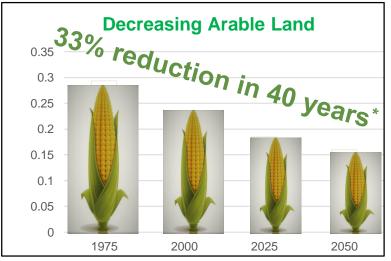
#### **SOP Demand drivers**

- Increasing population, decreasing arable land
- Changing demographics improved diet
- Increasing soil salinity
- Need for improved water efficiency
- China prompted major growth
- Could India be next?



#### SOP Growth forecast: ~4% pa

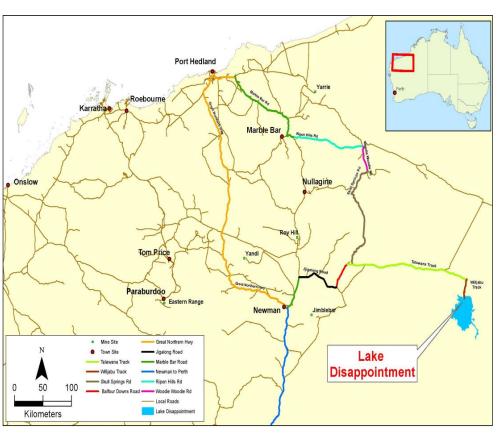




## LD SOP PROJECT - INTRODUCTION



#### An inter-generational project in the making.....



- Largest SOP deposit in Australia
- One of the highest average grades
- Highest evaporation in Australia
- Detailed PFS, attractive economics
- Years of extensive testwork and trials
- Permitting well-advanced
- ILUA executed with the Martu

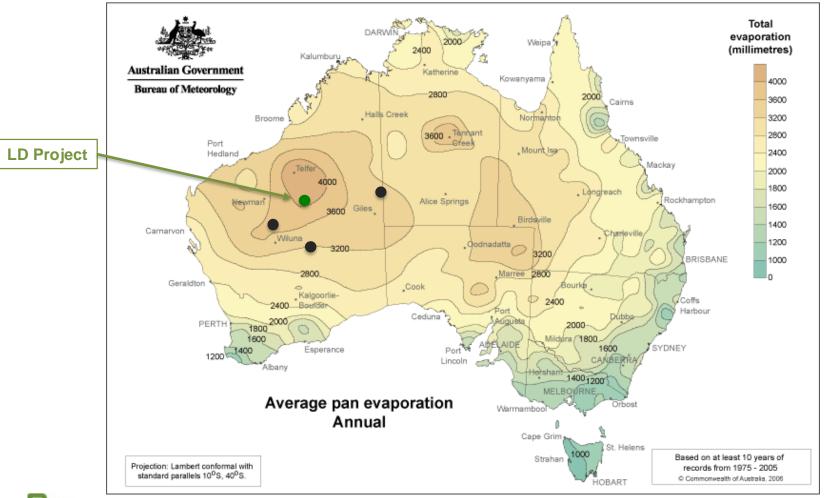
Located in one the world's most respected mining jurisdictions



## **HIGHEST EVAPORATION RATE**



#### No better location for a brine evaporation operation in Australia

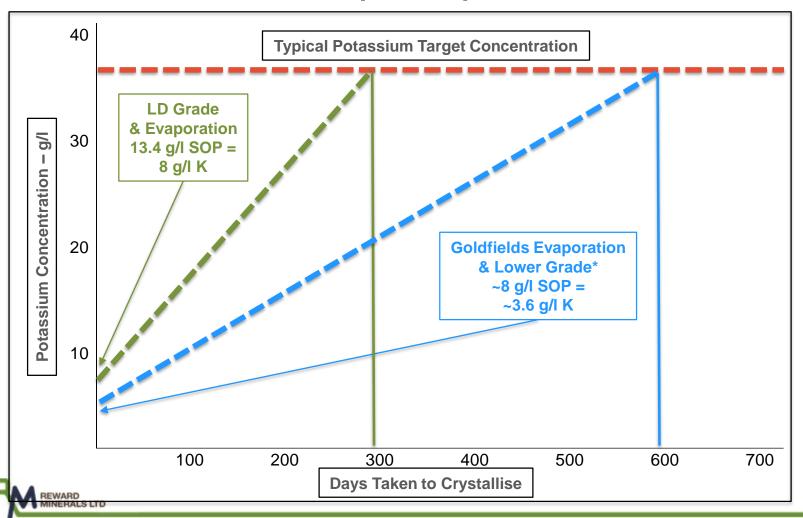




## LD – SUPERIOR GRADE AND EVAPORATION



# Grade and evaporation have a direct impact on production



## **OPERATIONAL/COST IMPLICATIONS**



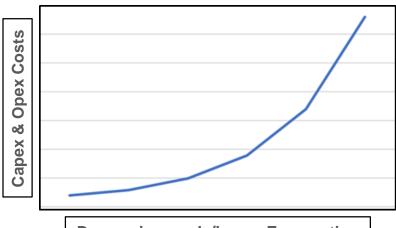
#### To match output, lower grade operations need to:





#### Bigger ponds, more seepage, with lower evaporation making it worse:



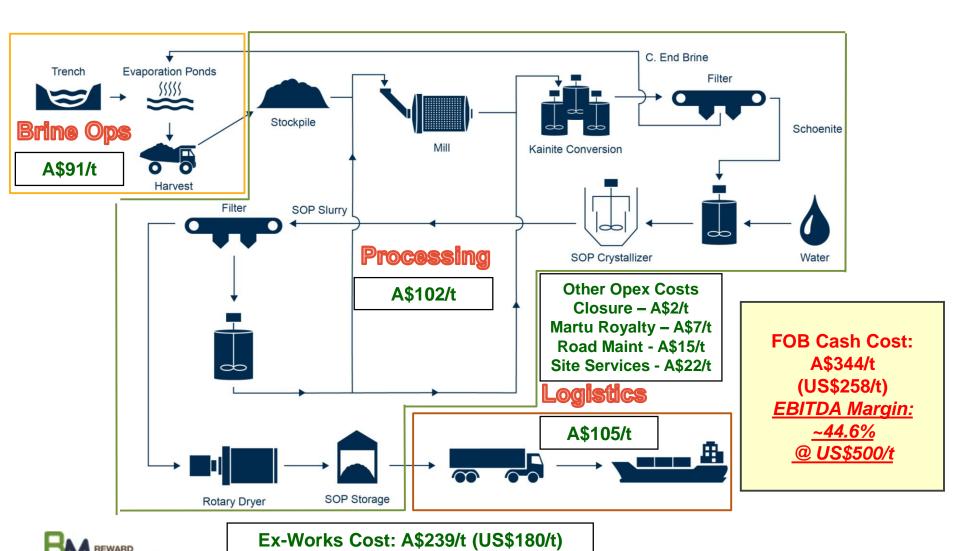




Decreasing grade/Lower Evaporation

## LD SOP PROJECT OPERATIONS OVERVIEW -





## LD SOP PROJECT METRICS



## **Production**

- At least 400,000 tpa
- ~9 Mt SOP produced over ~25 years
- Less than 10% of the resource

## Capital cost

- A\$345 M, includes indirects and owners costs (+/-20%)
- A\$451 M, includes contingency & pre-production costs

## **Operating Cost**

- Cash cost A\$335/tonne (FOB Port Hedland)
- AISC A\$376/tonne (FOB Port Hedland)



## LD SOP PROJECT METRICS - ECONOMICS



## **Assumptions**

Price: US\$500/tonne, FX: AUD/USD: 0.75

Discount Rate: 8% Real

• Royalty: State: 3.75%, Martu: 1.25%

## **Margins**

Average EBITDA – 45% (~\$118 M/year)

Average Cash – 48% (~\$122 M/year)

## Returns

• Pre-tax: NPV<sub>8%</sub> – \$518 M, IRR – 19%

• Post-tax: NPV<sub>8%</sub> – \$293 M, IRR – 15%

State & Martu Royalties: ~\$286 M



## **CONSERVATIVE PFS**





**SOP Grade** 

- PFS Assumption: 10 g/litre
- Pumping trials: ~13 g/litre
- Approximately 200 million litres pumped to date



#### **Flow Rates**

- 15 trenches excavated (20 m –1 km long) and pumped
- ► Flow rates 6 to >100 l/sec/km
- 15 l/sec/km used in PFS



## REALISTIC AND DELIVERABLE LOGISTICS



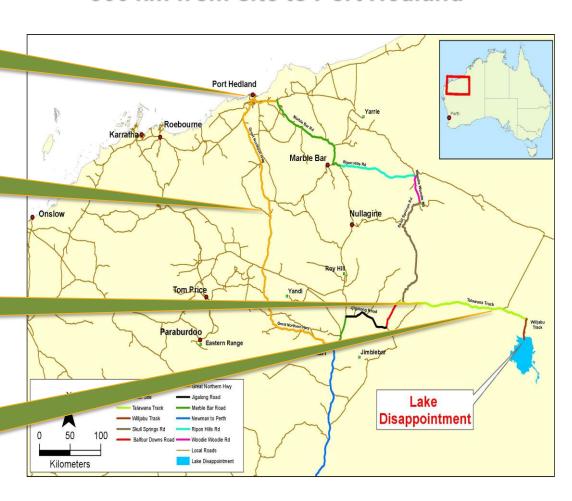
A world class port exporting millions of tonnes per year

511 km sealed road to Port Hedland

355 km of existing, frequently used track

First 250 km
designed in detail
from terrain models
at +/-100mm
accuracy

#### 866 km from site to Port Hedland



## **CURRENT ACTIVITIES\***



- ► Environmental Permitting:
  - "ERD" (EIA) Submitted
  - Public Consultation
- Resource Conversion:
  - Infill drilling program
  - Reserve Definition
- Flowsheet Improvements:
  - Ongoing R&D
- Pond Trials:
  - Evaporation
  - Crystallisation
  - Seepage







## **CONCLUSIONS**



## Reward's LD Brine SOP Project:

#### Is technically robust

- Conservative PFS conducted to exacting standards (+/-20%)
- ► Flowsheet *independently reviewed* (ERCOSPLAN)

#### ... and economically attractive, with

Scope to improve economics on multiple fronts

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

- One of the world's largest, longest-life brine SOP Projects
- Operating in the best evaporative environment
- With great prospects for increased scale and longer life



## Anything but disappointing



## **APPENDICES**





## PFS RESULTS – CAPITAL COSTS



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
Subtotal	301.7
Indirect Costs (EPC, Consultants, Commissioning)	20.0
Owners Costs	23.4
Subtotal	43.4
Total Capital Costs before Contingency	345.1
Contingency	59.9
Total Initial Capital Cost	405.0
Working Capital (Pre-Production Operating Expenses)	45.6
Total Development Capital Cost	450.6



## LD - INDICATIVE SCHEDULE



		2018 2019						20	20			20	21			20	22		2023				
ACTIVITY	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Project Quarter					Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	
Project Assessment and Approval						•																	
EPA Assessment and Approval					<u></u>																		
Feasibility Study					4																		
Feasibility Study Assessment and Project Approval for Execution					<u>K</u>																		
Early Engineering Works				ĺ																			
EPCM Assessment and Award																							
Project Development - Site Establishment						•																	
Airstrip																							
Site Access Road																							
Accommodation Camp																							
Project Development - Operational Development										•			$\equiv$										
Evaporation Pond Construction																							
Trench Network Development																							
Process Plant Construction																							
Production														•								$\blacksquare$	
Brine Pumping to Ponds																							
Crude Potash Salts Harvesting																							
Process Plant Commissioning																							
SOP Shipments																							
Production Ramp-up	*********																~~~~						
Full Commercial Production																							





Note: " Signifies Project Commencement Date, assuming DFS completion 30 June 2018 For illustrative purposes only, to show the likely development schedule post DFS

## **EXPERIENCED BOARD & MANAGEMENT**



#### 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

#### 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 - Metallurgical Consultant**

- 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)

#### Lisa Chandler-Independent Environmental Advisor

- over 20 years' diverse professional experience as an environmental advisor to government and the private sector
- Formerly head of the Department of Environment and Conservation audit section
- BSc, MEng, MAusIMM, MEIANZ

#### 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)

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

- senior mining executive with extensive global fertiliser minerals experience



## **COMPLIANCE STATEMENTS**



#### Competent person statements:

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

- 1. 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.
- 2. 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.
- 3. Refer to ASX announcement dated 13 July 2018 titled "LD SOP Project PFS Enhancements" for full details of the improvement in product logistics costs for the LD Project and the associated improvement in the Project's economics. Apart from the improvement in trucking cost presented in that release all other material assumptions and technical parameters underpinning the PFS continue to apply and have not materially changed.
- 4. Additional information in relation to trench pumping trials, including volumes abstracted, flow rates and grades have been reported in the Company's four most recent quarterly reports, being for the quarters ending 30 September 2017, 31 December 2017, 31 March 2018 and 30 June 2018 respectively.





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