



**Diatreme
Resources
Limited**

Mineral Sands Conference
Melbourne – March 2016

DIATREME – GOLDEN SANDS



DISCLAIMER

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STATEMENT IN ACCORDANCE WITH THE AUSTRALASIAN CODE FOR REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND ORE RESERVES (THE JORC CODE)

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Ian Reudavey, who is a Member of the Australian Institute of Geoscientists and a full time employee of Diatreme Resources Limited. Mr Reudavey has sufficient experience which is relevant to

the style of mineralisation and type of deposit under consideration and to the activity which he has 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 Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report that relates to Ore Reserves is based on information compiled by Mr Phil McMurtrie, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr McMurtrie is a director of Tisana Pty Ltd and is a consultant to Diatreme Resources Limited. Mr McMurtrie has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has 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 McMurtrie consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Presentation Outline

Diatreme Resources

Experience counts

Cyclone Project

Key milestones delivered

Mineral sands outlook

Zircon supply deficit forecast

Strong project pipeline

Tick Hill, Cape Bedford

Conclusion

Diatreme ready to go



Experienced Team

Experienced management team focused on streamlining operations with focus on key projects:

Neil McIntyre – CEO, 25yrs experience in banking, finance, resources

Ian Reudavey – Chief Geologist, 25yrs in exploration & mining, 15yrs mineral sands

Phil McMurtrie – Project Manager, 40yrs experience mining, 20yrs mineral sands

Tuan Do – Financial Controller/CFO, 30yrs experience, 10yrs resources sector

Skin in the game

DRX— Capital Structure

Shares on Issue	809.8 Million
Options on Issue (Listed)	0 Million
Options on Issue (Unlisted)	41.3 Million
Share Price (20 th March 2016)	A\$0.015
Market Capitalisation (as at March 2016)	A\$12.1 Million

Substantial Shareholders (March 2015)	Interest
Mr Andrew Tsang (and associates)	13.77%
Mr Zhenbin Jian	10.13%
Mr Yufeng (Daniel) Zhuang	7.37%
Ms Chenxia Zhou	6.17%
Mr Chenfei Zhuang	4.83%
Total Interest of Top 20 Shareholders	68.27%

Directors

Position

William Wang	Chairman
Andrew Tsang	Non Executive Director
Daniel Zhuang	Non Executive Director

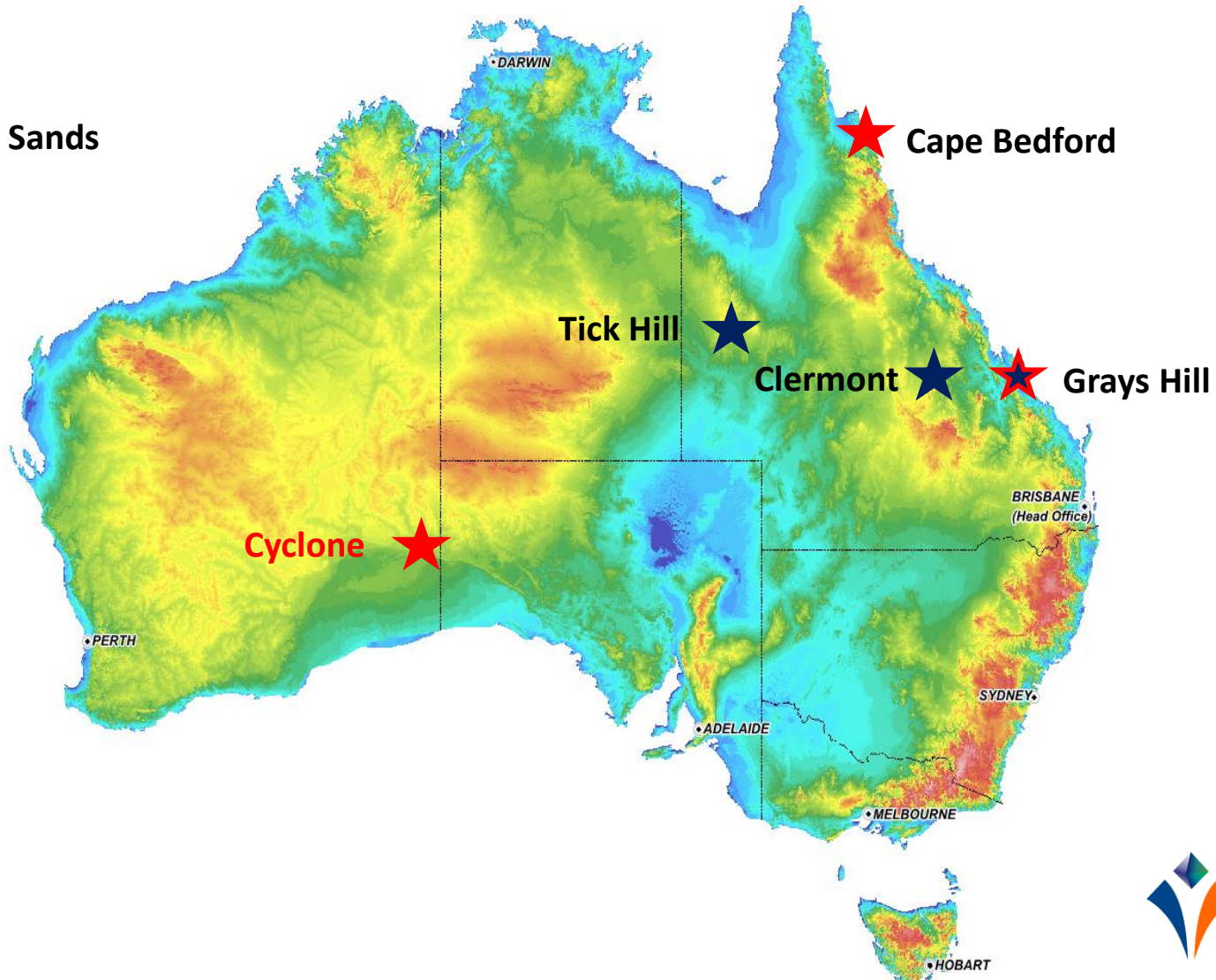
Management

Position

Neil McIntyre	Chief Executive
Ian Reudavey	Chief Geologist
Phil McMurtrie	Project Manager
Tuan Do	Financial Controller/CFO

Australian Focus

- ★ Mineral Sands
- ★ Metals



Diatreme's Flagship – Cyclone Project, WA



Cyclone Project – Investment Fundamentals

- **JORC Resource:** Currently 211Mt @ 2.3% HM (Cyclone + Cyclone Extended)
- **JORC Reserve:** Cyclone 140Mt @ 2.5% HM containing 1 Mt Zircon;
- **CAPEX** of \$A146 million and annual average **OPEX** of \$A80 million (reductions in CAPEX of \$A77 million by adoption of best practice technologies)
- **Annual net average EBITDA of \$53M per annum during mine life**
- Hong Kong-based Perpetual Mining Holding Limited 6% Project Interest
- Focus on continued project de-risking and advancing pathway to mining

Cyclone Project Builds Momentum

Water Supply

Extensive groundwater aquifer discovered beneath Cyclone Dec 2013. First bore complete (>40 l/s). Pump test required for bore-field design.

Mine and Haul Road

Environmental studies complete and Public Environment Report submitted in November 2014; PER process set to be concluded April 2016.

Mining Lease (ML69/141)

Mining agreement signed with the Traditional Owners (Spinifex People) and ML subsequently granted November 2014.

Cyclone HM Resource Expansion

Purchase agreement for the Cyclone Extended resource executed with Image Resources in March 2015, significantly expanding resource and reserve.

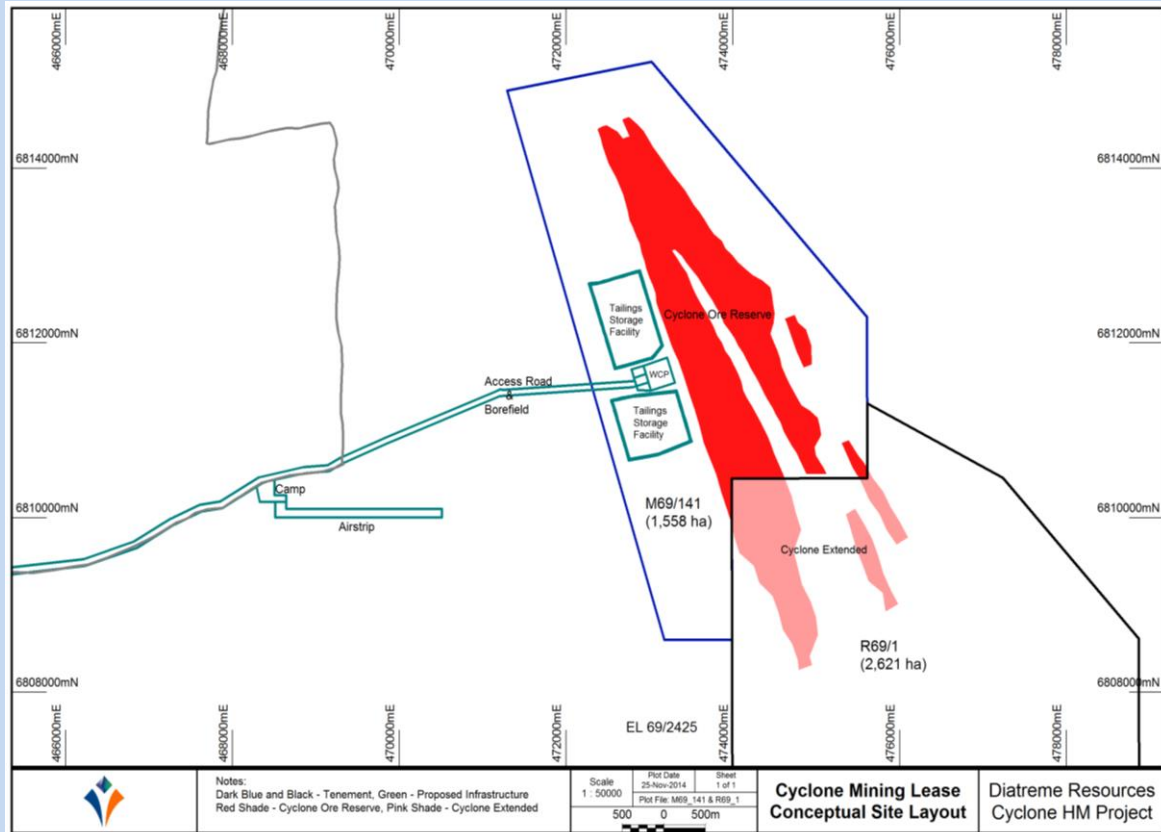
Cyclone Mining Lease & Site Layout

Mining Lease M69/141 has been granted for the Cyclone Ore Reserve (dark red) and the operational activities that will occur around it. These activities include wet concentrating, tailings disposal, HMC stockpiles, offices, workshops, infrastructure and services.

Cyclone Extended (light red) is secured under a Mineral Retention Licence (R69/1).

An application for a Miscellaneous Licence for the haul road, accommodation camp, airstrip, and borefield has been lodged. EPA approval is required for the road alignment which has been requested in the PER.

The mine site and associated activities including the proposed road alignment have all been assessed by Diatreme's environmental consultants as meeting the EPA's environmental objectives.

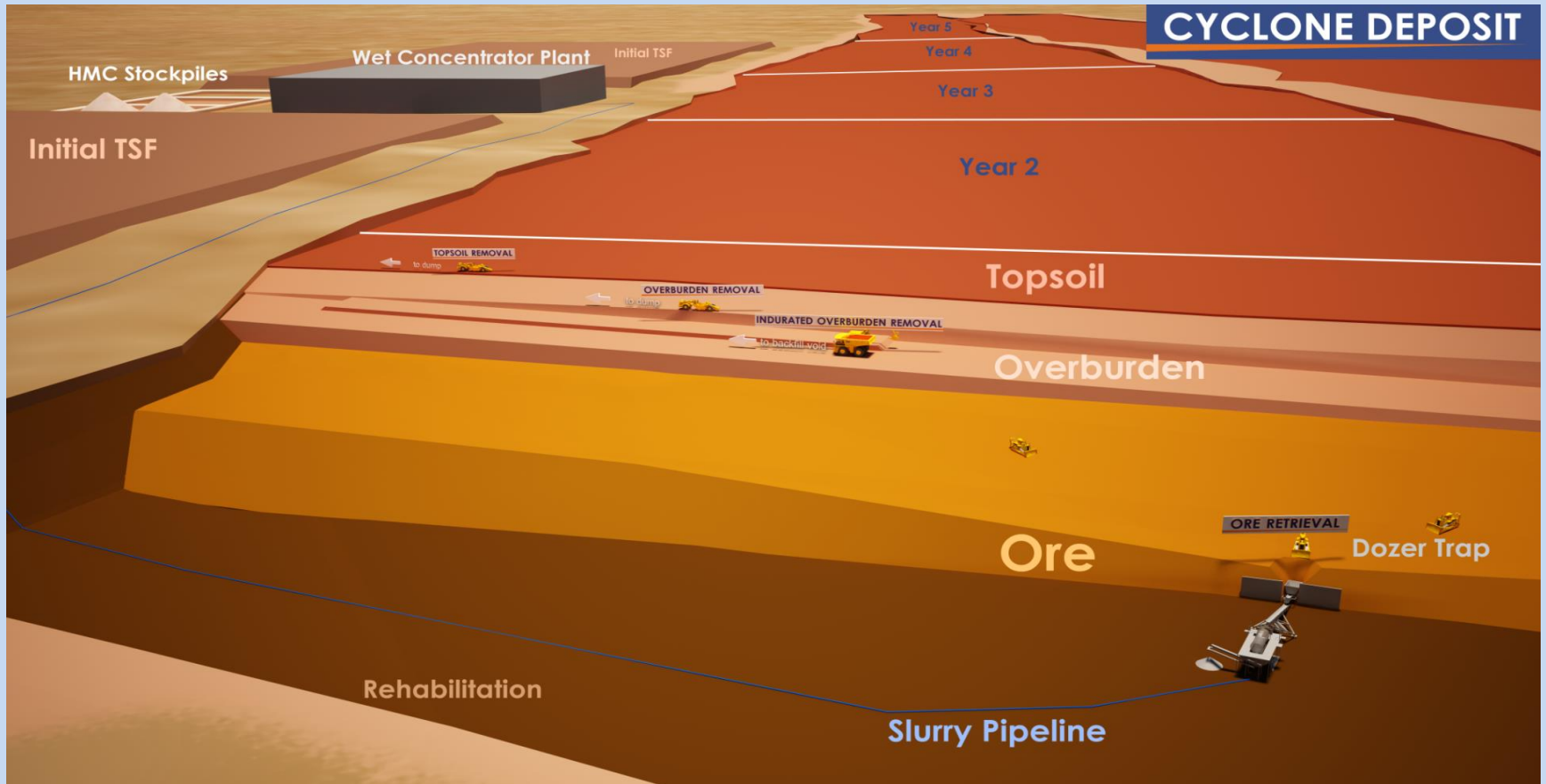


Cyclone Project Milestones

Schedule	Date
Pre-Feasibility Study	Completed - March 2012
Definitive Feasibility Study (most permits)	Q3 2016
Project Financing	Q1 2017
Construction & Development	Q3 2017
Mining & Production	Q2 2018



Proposed Mining Methods



PFS Mining Proposal

Strip Ratio	1.1: 1
Mining Rate (Dry)	1,300 tonnes per hour – 2 x Dozer traps
Mine Site Wet Concentration Plant Product	26 Tonnes / Hour HMC production 147,000 t PA @ 98.5% HM Concentrate
Transport - Road	240km - 4 trucks x 110 tonnes to Forrest
Transport - Rail	1,000km

OPTIONS

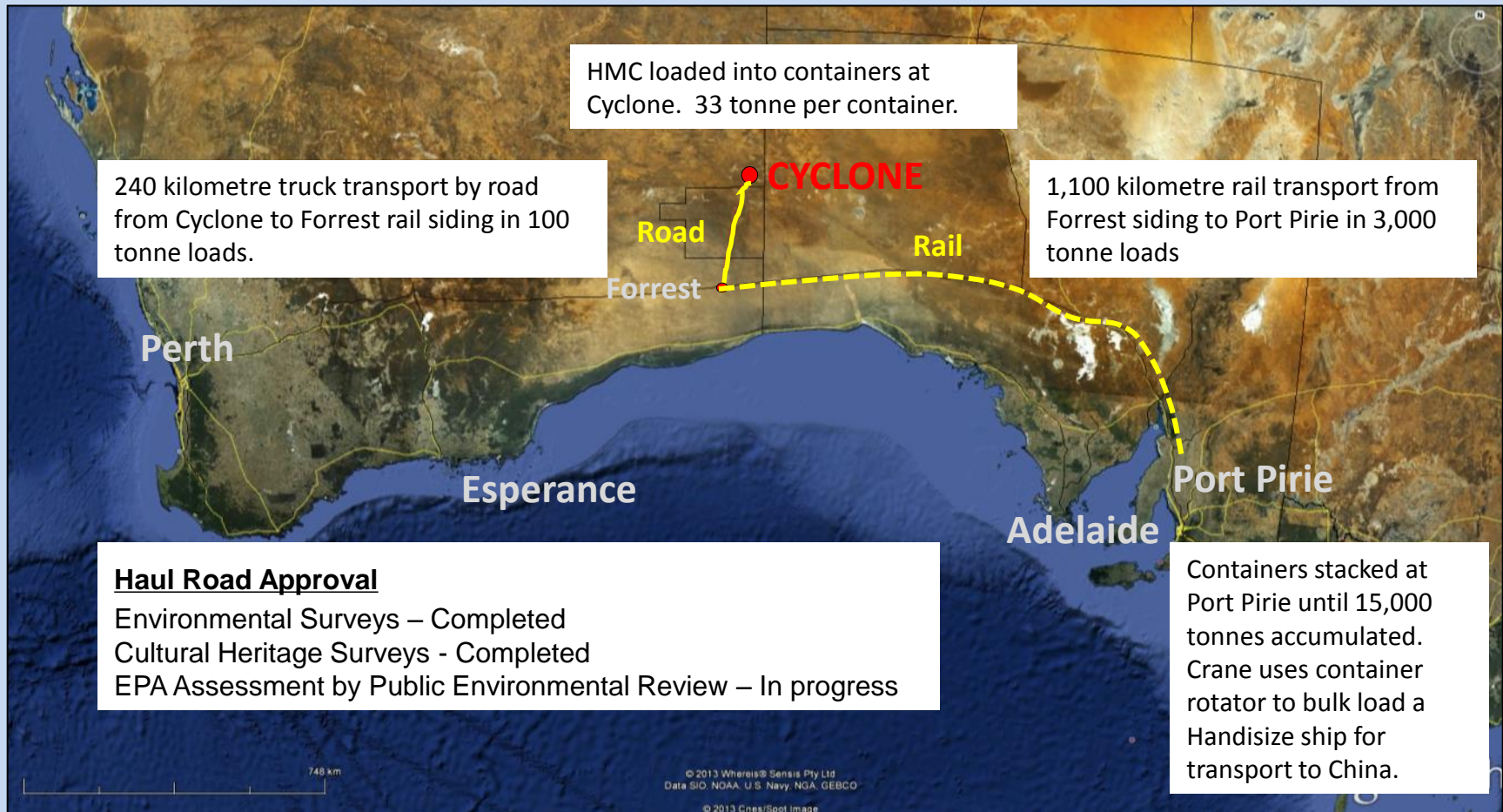
Mineral Separation Plant in Australia

Mineral Separation Plant in China or other country

Direct sale of HMC within Australia

Direct sale of HMC offshore – most likely option

Preferred Transport Option



Cyclone Project 2016 Financial Estimates

- Cyclone Project including Cyclone Extended
- Evaluation based on sale of HMC CIF China
- 14 year mine life at 10 Mt per year
- Average annual production of 155 kt HMC (A\$139 M/year)
- A\$146M capital cost estimate and annual operating cost A\$80M

HMC Price (USD)	\$US724/t
NPV (AUD)	\$208M
IRR	30%
Payback	3.2 years

Base Revenue Assumptions - Zircon US\$1,123/t at start up, Exchange Rate AUD\$1 = US\$0.75

DRX Recent Significant Announcements

- **Dec. 2015:** Cyclone Ore Reserve increased by 47%, mine life lengthened to 14 years following incorporation of acquired Cyclone Extended resource
- **Quarterly report Jan. 2016:** Project substantially de-risked, with award of Mining Lease, agreement with Traditional Owners and identification of water supplies; environmental approvals the final step
- **Cyclone Project costs reduced:** CAPEX down \$77m, OPEX cut \$11m after internal engineering reviews
(Project fundamentals being improved by redesign and using best practice technologies)
- **Beer & Co research report Feb. 2016:** 'Buy' & 7.2 cps valuation; Major share price driver 'the conclusion of an investment agreement for Cyclone'

Cyclone Project Fundamentals

- Tertiary Beach Strandline Deposit
 - Thick, multiple strands resulting in broad mining widths (~400m) and 1:1 strip ratio
 - Low slimes (4.5% -53µm)
 - Low oversize (5.1% +2mm)
 - Sandy ore (d50 of 225µm for Beach)
 - Coarse grained HM (d50 of 170µm for Beach)
- High Value Mineral Assemblage
 - Average 28% Zircon , 68% Ti-minerals (65-95% TiO₂).
 - Low levels of trash HM, no primary Ilmenite
 - Low levels of U+Th in products
- Conventional mining, processing and tails management using proven techniques
 - Similar setting to Iluka JA operation

Cyclone Project Fundamentals

- Sufficient reserves to support extensive mine life
 - 14 years at 10Mt pa
 - Strand mineralisation gives options for high grading
 - Substantial resource base to support potential long term expansion
- Support of Traditional Owners to develop project
 - Strong relationship, mining agreement signed
- No competing land use
 - Quaternary dune field, Great Victoria Desert

Zircon Supply Deficit Forecast

ZIRCON SUPPLY CHALLENGE IN 3 YEARS

“Zircon from existing producers declining due to depletion and decline in grade and assemblage...Absent new investment there is a zircon supply challenge within 3 years” (Iluka Resources, 19 February 2016)

MARCH 2016: CHINA RAISES GROWTH TARGETS

Beijing to target 6.5-7% GDP growth rate in 2016; pledges to spend A\$164 billion on railways, \$338 billion roads in renewed focus on infrastructure

COMMODITY MARKETS FINDING A FLOOR – ANZ RESEARCH, MARCH 2016

“Commodity markets are showing signs that the worst may be over...Sentiment has also picked up, with a glass half full approach being taken” (11 March)

ZIRCON, RUTILE PRICE RISES FORECAST

Beer & Co. predicts zircon price to reach US\$1,500/t by 2018, rutile US\$1,200/t

Asia's Urbanisation Continues

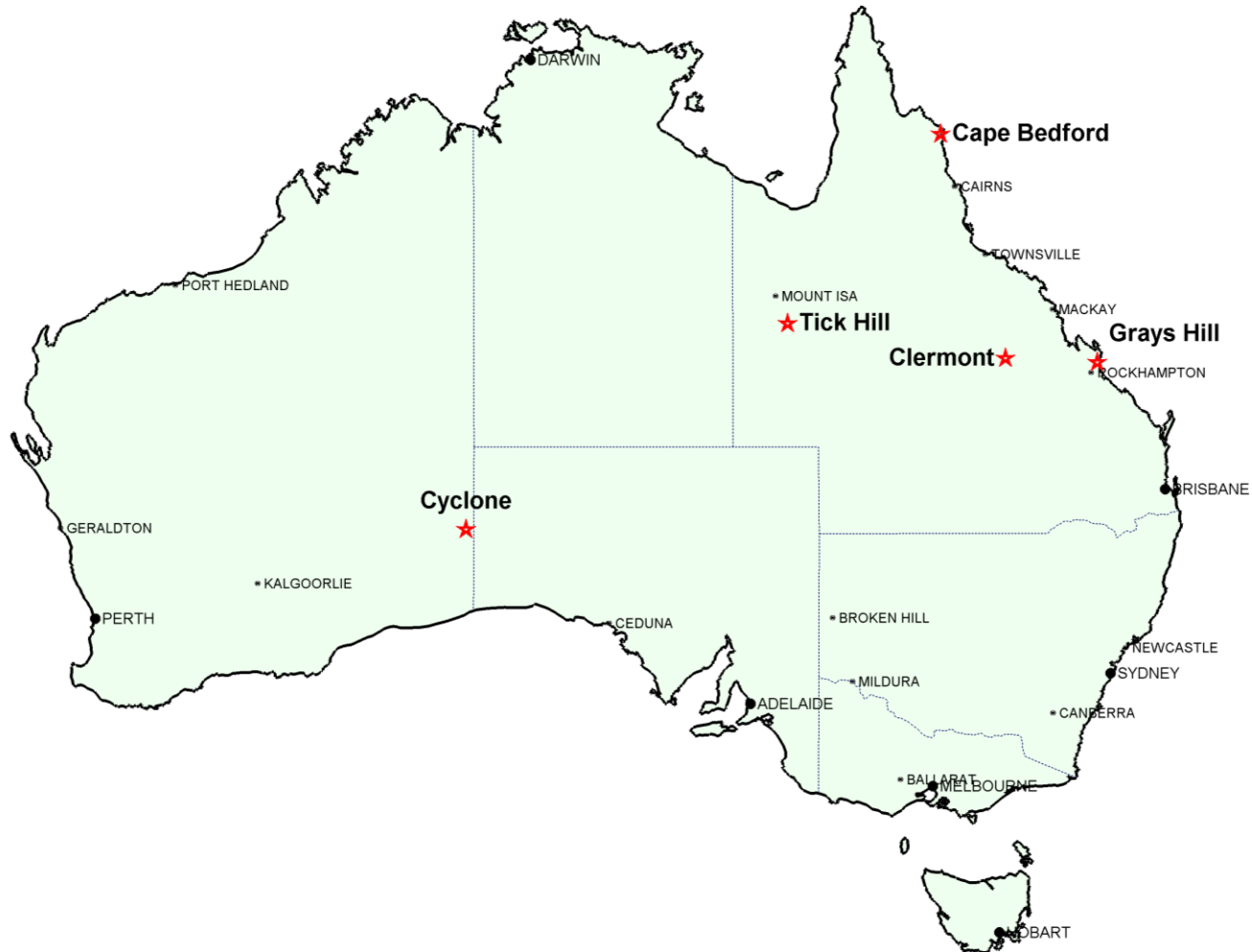
Urbanisation set to increase demand for mineral sands, including zircon:

WORLD BANK REPORT, JANUARY 2015

- Almost 200 million people moved to urban areas in East Asia from 2000-10
- Overall proportion of urbanites rose from 29% to 36% - but less than 1% of region's total land area is urbanised
- World Bank: Potential for “more decades of urban growth to come” – direct link between urbanisation and income growth

Source: <http://www.worldbank.org/en/news/press-release/2015/01/26/world-bank-report-provides-new-data-to-help-ensure-urban-growth-benefits-the-poor>

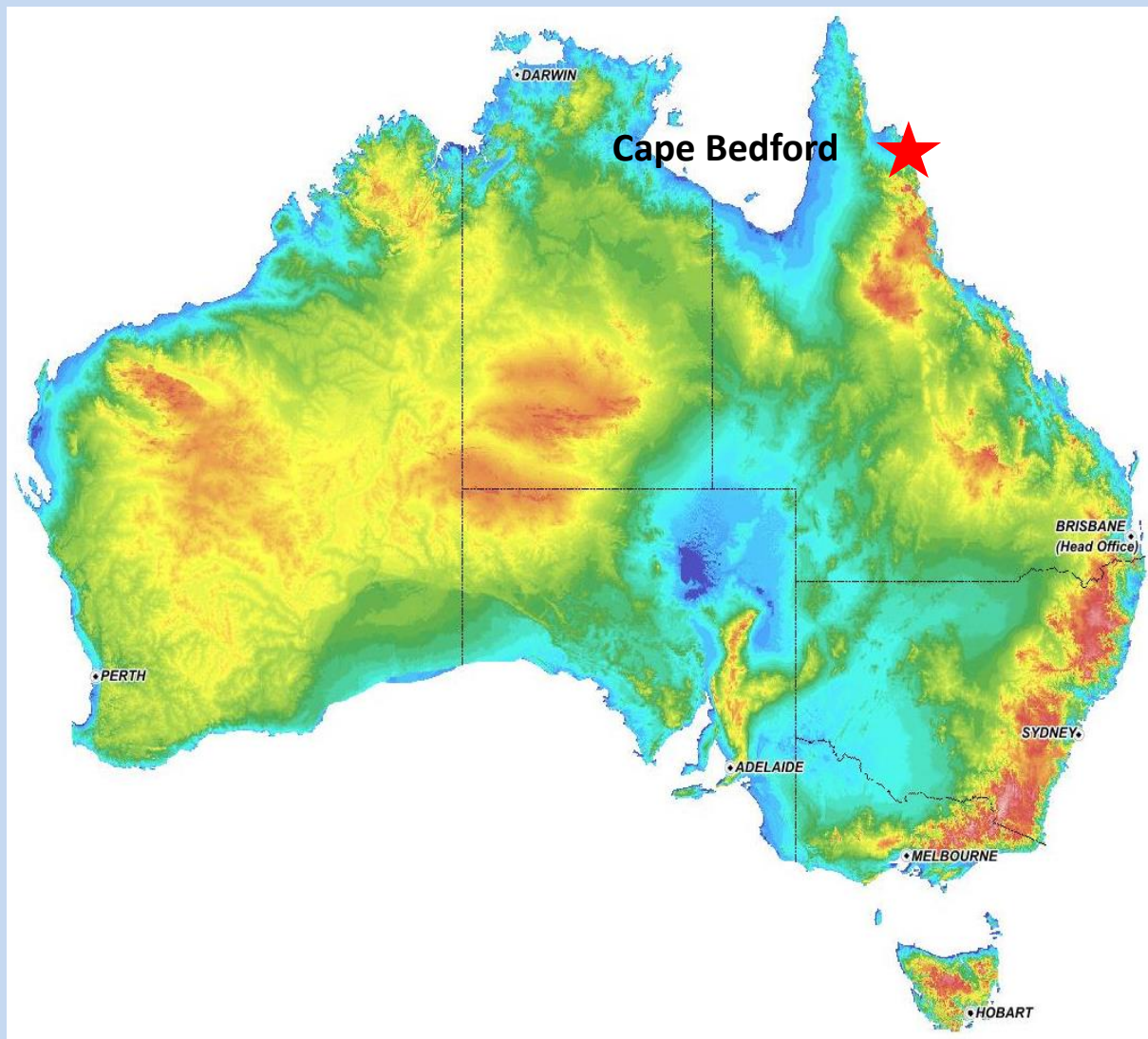
Diatreme's Project Pipeline



Exploration Overview

- Consolidation of exploration tenure – currently **8** exploration properties (incl. 1 application) and **4** ML, down from 29 (incl. 13 applications) in March 2014
- Mineral sands exploration tenure comprises Cyclone (WA), Yeppoon (Qld) and Cape Bedford (Qld application)
- Tick Hill Gold Project (Qld) – potential for near-term cash flow
- Focus on progressing Cyclone development milestones and delivering value to shareholders.

Cape Bedford, QLD

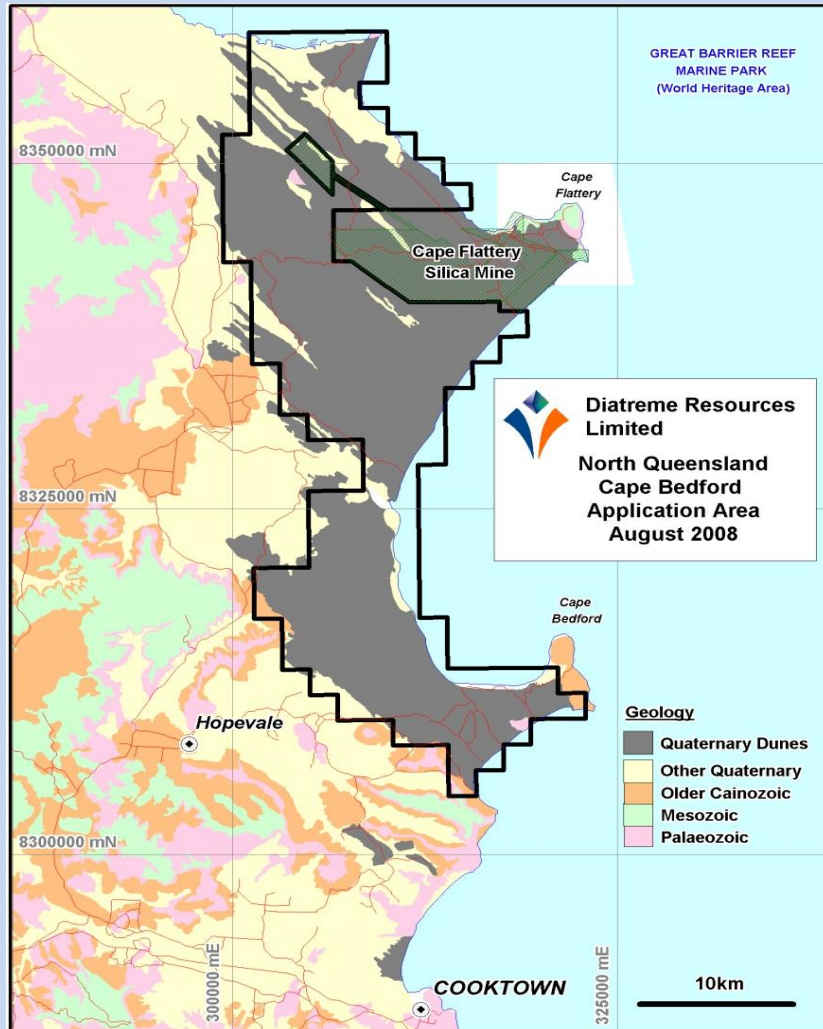


Cape Bedford, QLD
Silica Sand,
Heavy Mineral Sands

EPM Application
Conditions for grant
agreed with Traditional
Owners

Size: 554 sq. km

Cape Bedford, QLD



Large sand dune system with known silica sand and mineral sand occurrences over an area 50km x 15km in dunes up to 100m high.

Historical exploration indicates HM mineralised horizons in sand mass

High grade silica in previous drilling samples. Samples indicate areas with a high value assemblage of zircon, rutile & ilmenite.

Existing public access port at Cape Flattery.

Cape Flattery silica sand operation has established a mining culture with the Aboriginal landowners.

Traditional owners have agreed terms for supporting the tenement approval.

Currently in negotiation with a potential farm-in partner

Cape Bedford, QLD



Cape Bedford, QLD



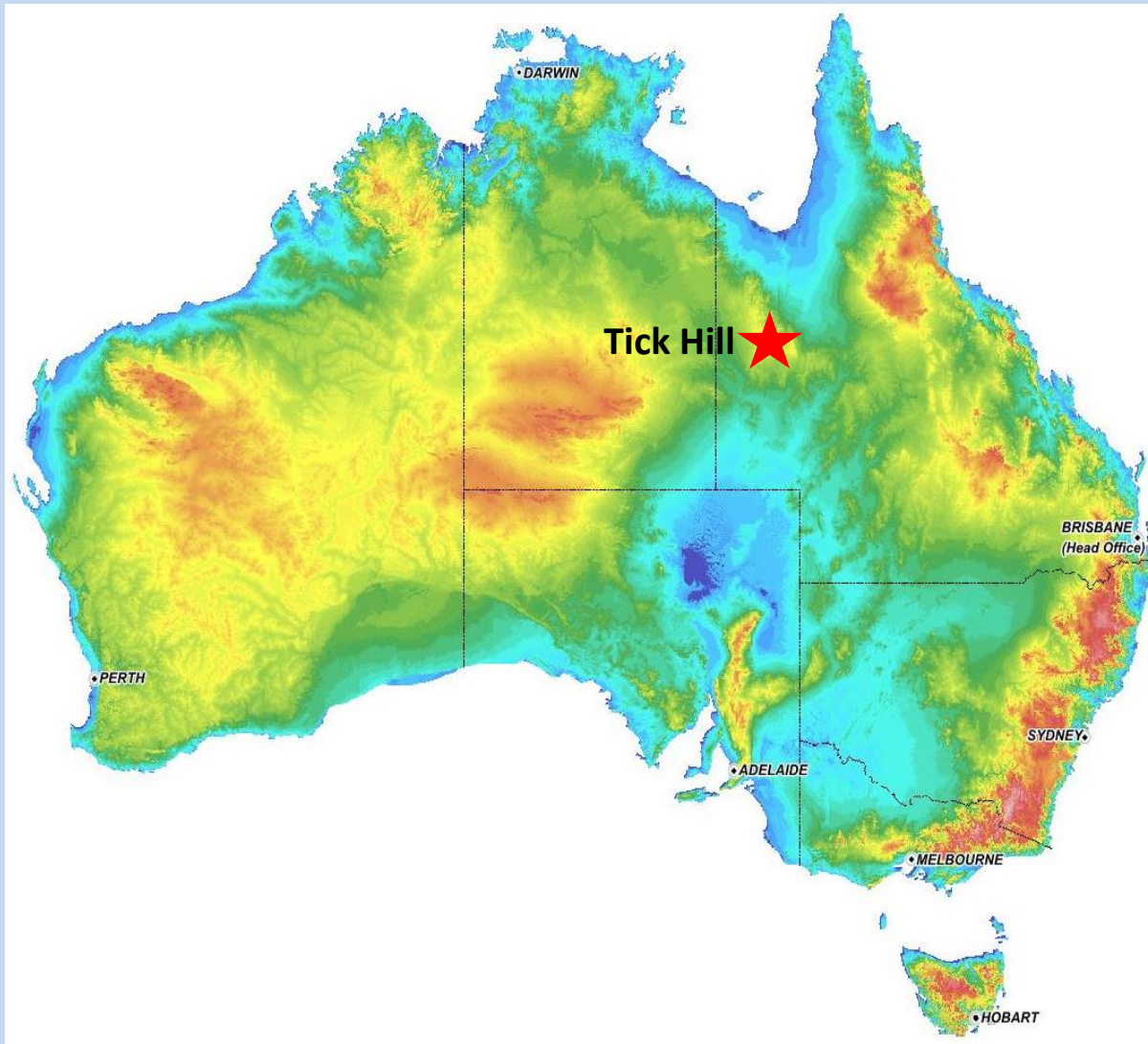
Mineralisation on the current beach shedding from the dunes

Cape Bedford, QLD



Major dune field with high grade silica sand overlying heavy mineral sand exploration targets

Tick Hill Gold Project, QLD



**Tick Hill, Qld
Gold**

3 Granted ML's

Size: 3.9 sq. km

Tick Hill Gold Project



Produced 500,000 oz. gold from 700,000 tonnes of ore at 22.6g/t Au

Potential For Near-Term Cash Flow

- **Maiden Mineral Resource** announced January 2016 for Tick Hill tailings material, estimated at 630kt at 1.08 g/t Au containing 680kg (22,000 troy oz) gold
- **Scoping Study confirms viability of standalone operation** processing tailings resource; 20-month operation using standard CIP/CIL circuit (9 March 2016)
- Diatreme and joint venture partner, Superior Resources Ltd (ASX:SPQ) to further progress engineering and commercial studies, with implementation and approvals timeline to identify project equity funding and/or debt financing options
- Current Australian dollar gold price exceeds \$1,700/oz, making Tick Hill a potentially valuable source of near-term cash flow

Diatreme – Delivering Value

- Flagship project, Cyclone now advancing through final de-risking process as Diatreme builds a platform for further investment
- Potential for near-term cash flow for shareholders from Tick Hill Gold Project tailings operation
- Attractive project pipeline, including Cape Bedford silica/HMS project, located next to world's biggest silica mine

DIATREME RESOURCES: DELIVERING VALUE FOR SHAREHOLDERS

Supplementary Information

CYCLONE RESOURCE ESTIMATE - ASX Release 9 April 2015

Category	HM cut-off %	Material Mt	HM %	HM Mt	Slime %	OS %	Head Grade				Zircon Kt
							Zircon %	HiTi %	Alt Ilm %	Si TiOx %	
MEASURED	2.0	69	3.7	2.55	3.6	3.8	1.05	1.17	0.48	0.82	729
MEASURED	1.5	102	3.1	3.13	3.9	4.4	0.87	0.96	0.40	0.67	891
MEASURED	1.0	156	2.4	3.79	4.2	5.1	0.69	0.77	0.32	0.53	1,072
INDICATED	2.0	13	3.2	0.41	3.8	4.3	0.64	1.05	0.73	0.59	81
INDICATED	1.5	24	2.5	0.61	3.9	4.8	0.50	0.82	0.55	0.45	123
INDICATED	1.0	55	1.8	0.99	4.1	4.5	0.36	0.61	0.37	0.31	201
TOTAL	2.0	82	3.6	2.96	3.6	3.9	0.99	1.15	0.52	0.79	809
TOTAL	1.5	127	3.0	3.74	3.9	4.5	0.80	0.94	0.43	0.63	1,013
TOTAL	1.0	211	2.3	4.78	4.2	4.9	0.60	0.72	0.34	0.47	1,273
Mineral Assemblage							27%	32%	15%	21%	

- Rounding may generate differences in last decimal place
- A constant SG of 1.7 has been used to derive material tonnes
- Slime refers to material typically <53um
- OS refers to material typically >2mm
- Mineral Assemblage derived from QEMSCAN® analysis
- High Titanium Oxides (HiTi) – Ti-oxides containing 70 - 95% TiO₂, Altered Ilmenite (Alt Ilm) – Ti-oxides containing <70% TiO₂, Siliceous Ti-Oxide (Si TiOx) – Ti-oxides containing >10% silica rich Ti minerals.
- “Strand”, “Beach” and “Nearshore” represent differing geological domains based upon varying sediment grain size and sorting (i.e. depositional environment), mineralogy and HM grade.

Supplementary Information

CYCLONE RESERVE ESTIMATE - ASX Release 14 December 2015

Reserve Category	Zircon cut-off %	Material Mt	HM %	HM Mt	Slime %	OS %	Head Grade						Zircon Kt
							Zircon %	Rutile %	Leuc %	HiTi %	Alt Ilm %	Si TiOx %	
PROBABLE	0.4	140	2.5	3.54	4.5	5.1	0.71	0.07	0.17	0.58	0.32	0.57	1,000
TOTAL	0.4	140	2.5	3.54	4.5	5.1	0.71	0.07	0.17	0.58	0.32	0.57	1,000
Mineral Assemblage							28%	3%	7%	23%	13%	22%	

- Rounding may generate differences in last decimal place
- A constant SG of 1.7 has been used to derive material tonnes
- Slime refers to material typically <53um
- OS refers to material typically >2mm
- Mineral Assemblage derived from QEMSCAN® analysis
- Leucoxene (Leuc) – Ti-oxides containing 85 – 95% TiO₂, HiTi - Ti-oxides containing 70 - 85% TiO₂, , Altered Ilmenite (Alt Ilm) – Ti-oxides containing <70% TiO₂, Siliceous Ti-Oxide (Si TiOx) – Ti-oxides containing >10% silica rich Ti minerals.
- Resources are inclusive of Reserves