

Exploration Activities Report Quarter ended 30 June 2012

Highlights

CYCLONE ZIRCON PROJECT

Further bulk samples collected from the Cyclone Deposit for metallurgical testwork along with the completion of infill resource definition.

Cyclone now drilled at an average line spacing of 125m for the West Strand and 140m for the East Strand.

The Cyclone Project ranks highly against other mineral sand projects.

PFS results have demonstrated a very strong and robust operating margin for zircon, which constitutes more than 80% of the revenue of Cyclone.

METALLIFEROUS PROJECTS

Clermont Copper Project review by Antofagasta Minerals S.A. under existing MOU is progressing well and drill targets have been identified.

CORPORATE

An Institutional roadshow was undertaken to institutions and industry players in the US, London and Hong Kong. With completion of the PFS and entry into the DFS stage, Cyclone is recognised as one of the pre-eminent zircon plays in the world.

Share placements totalling \$1.1million to sophisticated and professional investors were negotiated with corporate advisor, Octa Phillip as lead manager. Placements to interests associated with the Company's largest shareholder and director, Mr Andrew Tsang, will require shareholder approval.



Diatreme Resources is an Australian based diversified mineral explorer with significant projects in heavy mineral sands, copper, base metals and gold.

The Company owns the world class **Cyclone Zircon Deposit** in Western Australia, situated within the recognised **Eucla Basin province**, along with extensive areas of underexplored ground prospective for heavy mineral sands.

The Board and senior personnel exhibit wide experience, ranging through the exploration and development phases of resource management.

Australian Securities Exchange

Codes: DRX and DRXO

Securities

Ordinary shares (DRX):

363,029,859

Listed 15c options (30/09/13)(DRXO):

88,650,035

Board of Directors

Executive:

Tony Fawdon - Chairman/CEO

David Hall - Operations

Non-executive:

George White

Andrew Tsang

William Wang

Neil McIntyre

Joint Company Secretaries:

Leni Stanley

Tuan Do

Key Projects:

- Eucla Basin Cyclone Zircon Project
- Clermont Copper Project
- Anabama Copper Project
- Gilbert River Base Metals Project

Diatreme Resources Contact:

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Executive Chairman/CEO

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Share Registry:

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MINERAL SAND PROJECTS

Cyclone Zircon Project (WA)

The Cyclone Project is located within the northern Eucla Basin, an emerging zircon province of global significance, being 25 kilometres west of the South Australian border and 230 kilometres north of the transcontinental railway. A Definitive Feasibility Study (“DFS”) commenced over the project in early 2012.

During the current quarter, further bulk samples were collected from the Cyclone Deposit for metallurgical testwork along with the completion of infill resource definition drilling.

The Cyclone Deposit has now been drilled at an average line spacing of 125m for the West Strand and 140m for the East Strand, and a number of 25m spaced holes were recently drilled to provide improved edge definition of high grade strandline mineralisation. A review of the resource estimate will be carried out once all assay results are received.



The PFS net present value (“NPV”) calculated for the Cyclone Project is \$194 million, with an IRR of 32% and pay back period of 2.1 years. PFS results have demonstrated a very strong and robust operating margin for zircon, which constitutes more than 80% of the revenue of Cyclone. Zircon is currently selling in a range of \$2500 to \$2700 per tonne, and Cyclone’s operating costs to produce a tonne of zircon is less than \$700; a net profit of \$1,800 to \$2,000 per tonne of zircon produced (based on current prices). It is expected that in the first 3 years of mining, Diatreme will producing 70,000 tonnes of zircon per year with an overall average of 65,000 tonnes of zircon over a 10 year mine life. This represents a very high profit margin.

COMPARISON OF DEVELOPING MINERAL SAND PROJECTS WORLDWIDE

Graphs which highlight the various rankings of the Cyclone Project against other mineral sand projects have been generated from published industry data. For developers, the following graphs are reproduced below:

Graph 1: In situ resource value per tonne of resources.

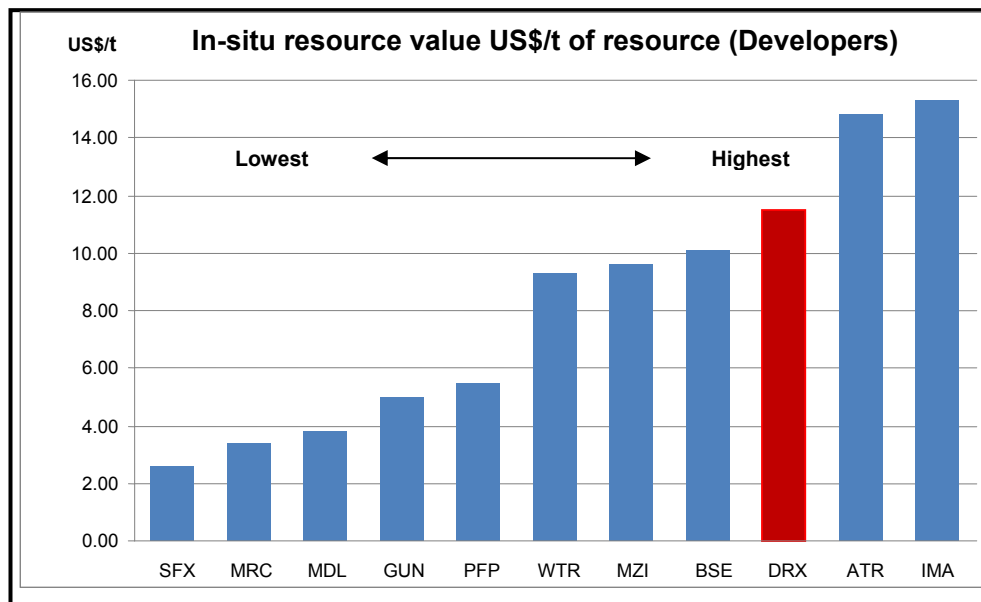
Graph 2: Slimes/Clay content

Graph 3: Capital costs

The relevant company codes used in the graphs and details of specific projects are itemised in the following table:

CODE	COMPANY	PROJECT	CURRENT PROJECT STATUS
ATR	Astron Corporation Limited	Donald	Scoping Study complete, Feasibility study underway
BSE	Base Resources Limited	Kwale	In Development
DRX	Diatreme Resources Limited	Cyclone	PFS complete, DFS underway
GUN	Gunson Resources Limited	Coburn	DFS complete, seeking funding
IMA	Image Resources NL	North Perth Basin	Scoping Study complete, Feasibility study underway
MDL	Mineral Deposits Limited	Grande Cote	Under Construction
MZI	Matilda Zircon Limited	Keysbrook	Scoping Study complete, Feasibility study underway
PFP	Pathfinder Minerals PLC	Moebase & Naburi	Scoping Study complete
SFX	Sheffield Resources Limited	Eneabba	Scoping Study complete
WTR	World Titanium Resources	Ranobe	Feasibility study underway

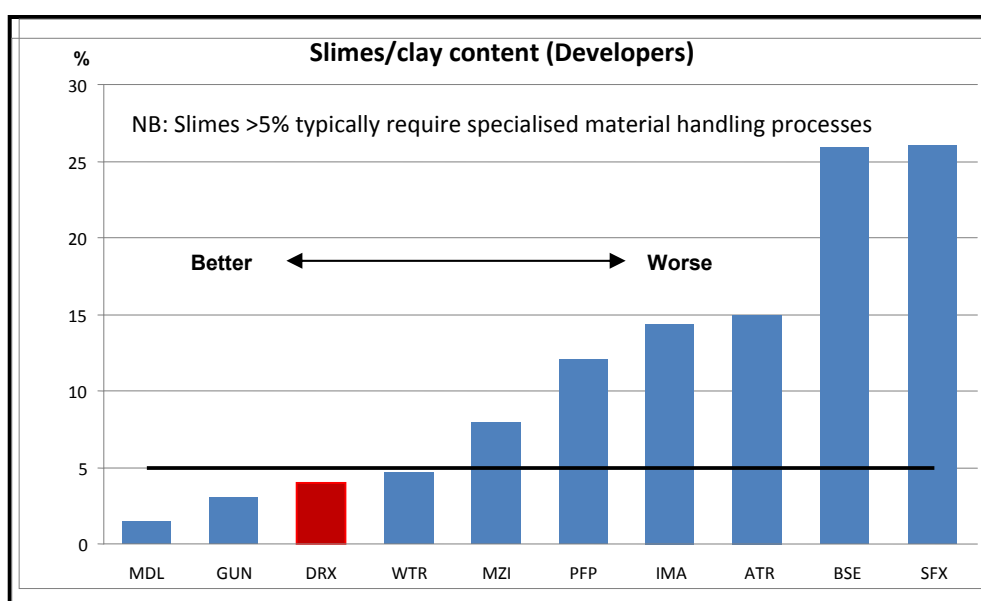
The in-situ resource value of the Cyclone Deposit, as shown in Graph 1 below, indicates that Diatreme is strategically placed when assessing the high valued zircon/titanium resources currently available and seeking to be developed. There are no other significant new zircon rich deposits coming on stream, as most other zircon production will be as a by-product from titanium rich ore bodies. This graph shows that the Cyclone Deposit is a very high value deposit compared to other potential new developments.



Graph 1: DRX ranking reflects the high zircon content of the Cyclone HM.

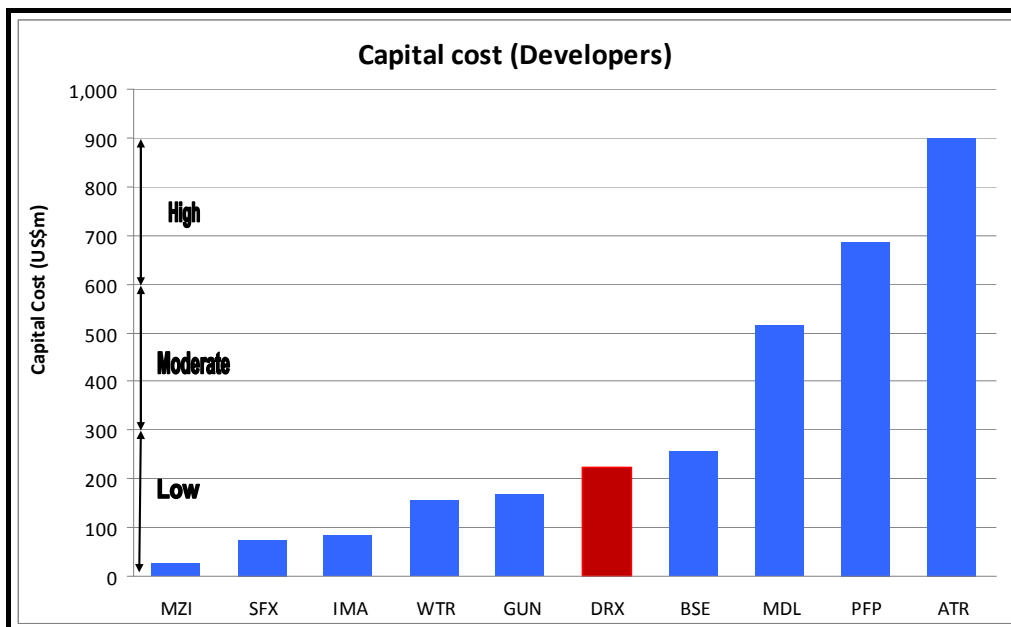
In technical terms, the Cyclone Deposit exhibits many positive features including:

- low slimes content (clay content of ore) – see Graph 2 below.
- moderate to coarse grained ore and minerals - some mineral sand deposits are very fine grained making ore extraction difficult.
- high zircon content with low Uranium/Thorium radioactivity - makes the deposit highly valuable, particularly with its radioactivity levels well below industry safety requirements.



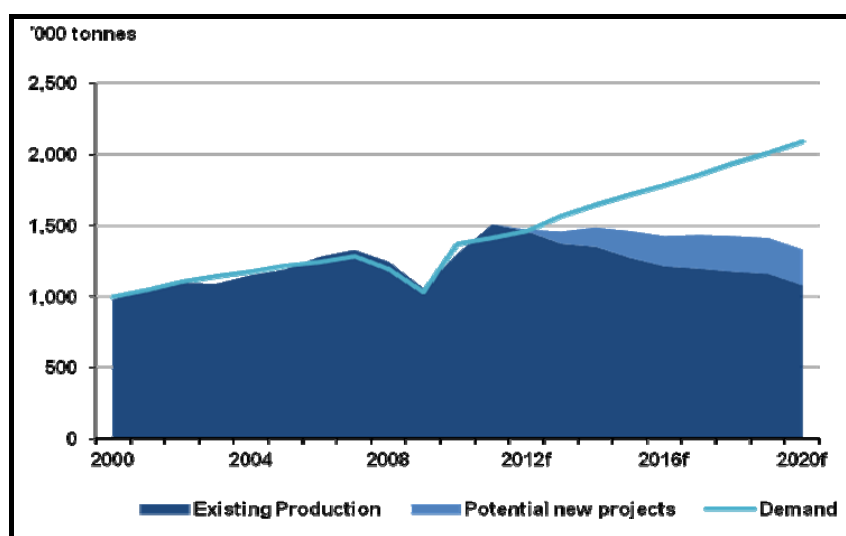
Graph 2: The low level of slimes (4.0%) at Cyclone will facilitate efficient mining, material handling, processing, tailings management and rehabilitation practices during the mining operation. This will result in lower operating costs and reduced water consumption.

Development costs of some mineral sand operations are expected to be high. Although the Cyclone Deposit is situated approximately 230km from the nearest railway line, the project is expected to have a low capital cost when compared to many of its peers – refer Graph 3 below. It should be noted that the BSE and MDL deposits have already been funded and are in the development stage. Cyclone’s location in Australia is fortunate in that it will not be exposed to offshore sovereign risk issues.



Graph 3: DRX ranking reflects the use of conventional dry-mining and mineral processing practices, partially offset by the remote location which requires significant infrastructure development.

As part of the Company’s PFS, TZ Minerals International Pty Ltd (“TZMI”) were engaged to prepare a mineral sands market study. Graph 4 below provides an estimate of the global zircon supply and demand over the period 1990 to 2020. Demand is expected to remain positive, outstripping supply from both existing and potential new projects, thus leaving room for the Cyclone Deposit to come on stream without affecting prices for zircon.



Graph 4: Base case global zircon supply/demand (1990-2020) as estimated by TZMI.

With continued funding, the Company's Cyclone Project Timetable Targets remain as follows:

Schedule	Date
Pre-Feasibility Study	Completed in March 2012
Definitive Feasibility Study	Q4 2013
Project Financing	Q1 2014
Construction & Development	2014 - 2015
Mining & Production	2015

The current Cyclone Project financials, based on the PFS are as follows:

Capital Investment (including PFS & DFS)	A\$233million
Average Annual Sales Revenue	A\$191million
Average Annual Operating Costs	A\$88million
Average Annual Tax Payable	A\$24million
Average Annual Operating Cash Flow after Tax	A\$78million
Payback Period	2.1 years
IRR	32%
NPV (10%) Base Case	A\$194million

Eucla Basin Exploration (WA)

Regional exploration aircore drilling was undertaken on tenements surrounding the Cyclone Deposit with the aim of locating further resources in the immediate vicinity. Additional work has also been completed on the Zephyr Deposit, 2.5km northeast of Cyclone.

Total drilling for the quarter involved 309 holes for 10,579m.

Location	Details
Cyclone Bulk Sample and Resource Infill	239 holes for 8,555.5m
Cyclone Geotechnical	3 holes for 15m (shallow stratigraphic investigations)
Cyclone Stratigraphic Investigation	1 hole for 105m (investigation for proposed deep bore)
Wanna East – Zephyr Deposit	21 holes for 773m (edge definition drilling of the Zephyr resource)
Wanna East – Hurricane area	4 holes for 111m (reconnaissance drilling east of the DEM feature)
Wanna Lakes – Hurricane area	32 holes for 852m (reconnaissance and infill drilling along the DEM feature)
Jungooner	9 holes for 167.5m (reconnaissance drilling of DEM high)

Eucla Basin Exploration (SA)

A meeting was held at Oak Valley with the Maralinga Tjarutja People to discuss access to their lands for further exploration on new tenements. The outcome of the meeting was very positive and the Company has been invited to continue with exploration on existing granted tenements and over the new, soon to be granted, tenements in the area.

Regional Exploration

Through project generation, DRX continues to study and review opportunities for quality HM exploration projects within Australia.

METALLIFEROUS PROJECTS

Clermont Copper Gold Project (QLD)

Proposed Farm-In MOU with Antofagasta Minerals S.A.

Under the Memorandum of Understanding with Antofagasta Minerals S.A. (“Antofagasta”) announced last quarter, exploration recommenced on the central Queensland Clermont Copper Project, hosting the Rosevale Porphyry Corridor (“RPC”).

The RPC has the potential to host a large buried porphyry copper - gold - molybdenum mineralised system. Significant exploration has been conducted by DRX since the prospect was discovered in 2008, including geological mapping and sampling, ground geophysics, RC and RAB drilling and over 6,000 metres of diamond drilling. This effort was successful in discovering mineralisation at a number of individual prospects within the RPC, and many prospects require further drill testing. The project area extends over two granted tenements (EPM17968, Clermont; and EPM19189, Parapet) and one tenement application (EPMA19544, Expedition Creek) – see location plan, Figure 2. The tenements host a number of other prospects which target copper, gold and nickel.

Within the Clermont tenements, Antofagasta is specifically targeting the highly prospective Rosevale Porphyry Corridor, a geological zone hosting copper, gold, silver and molybdenum porphyry-style mineralisation, along with adjacent geologically related mineralisation.

Under the agreed terms, Antofagasta has committed US\$400,000 over a six month period (nominated as the Initial Assessment Phase) to fund exploration, mainly over the RPC. This work, which commenced in March and is progressing well, includes geological mapping of outcrop, re-logging of existing diamond drill core and reprocessing and assessment of data. The initial phase of exploration is seeking to define subsurface targets for further evaluation through drilling, and to improve upon the geological understanding of the Clermont tenements as a whole, from an exploration and resource perspective.

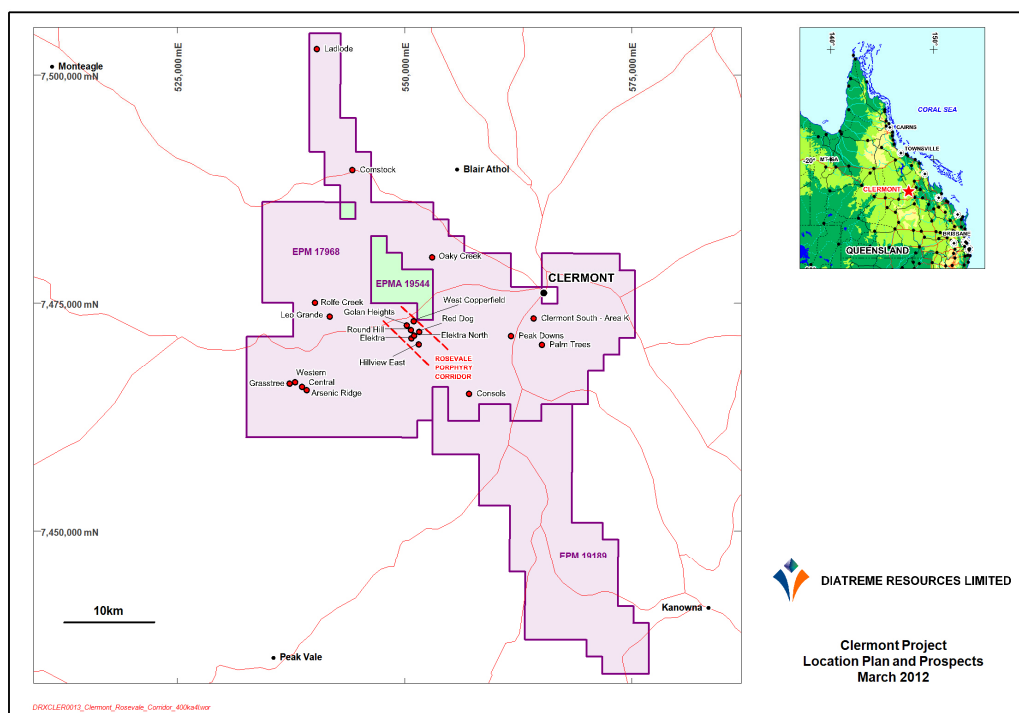


Figure 2: Clermont Project Location Plan showing prospects

Tick Hill Gold Project (QLD) - DRX reducing to 50%

Work has continued during the quarter to satisfy pre-conditions that form part of the farm-in agreement with Superior Resources Limited (ASX:"SPQ") in readiness to have exploration drilling included into the operations plan over the Tick Hill mining leases.

CORPORATE

An Institutional roadshow was conducted during the quarter with Tony Fawdon, Chairman/CEO, presenting to institutions and industry players in the US, London and Hong Kong. The Company remains encouraged by the level of interest afforded to the new and developing HM projects planned to come on stream over the next few years. With completion of the PFS and entry into the DFS stage, Cyclone is recognised as one of the pre-eminent Zircon projects in the world.

In early July, the Company, with corporate advisor Octa Phillip as lead manager, successfully negotiated a Placement to sophisticated and professional investors to raise \$1.1million. To date, \$312,000 has been received in the first allotment (13/07/12) with further funds to be received in the near future and following shareholder approval for funds from entities related to director, and largest shareholder, Mr Andrew Tsang.

Approval was given by shareholders at the AGM for the Company to implement an Employee Share Option Plan, the purpose of which was to provide an incentive for employees to add value to the Company.

Dated 24 July 2012



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Executive Chairman/CEO

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Competent Person Statements

The information in this report, insofar as it relates to Exploration Results and Mineral Resources is based on information compiled by company personnel under the supervision of Mr David Jelley, who is a full time employee of Diatreme Resources Limited and a Member of the Australasian Institute of Mining and Metallurgy. Mr Jelley 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jelley consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.