



## Exploration Activities Report Quarter ended 31 March 2011

### Highlights

#### HEAVY MINERAL (HM) SANDS PROJECTS

- Cyclone drilling recommenced following heavy rain delays with 33 holes drilled for 1,215 m.
- Cyclone Prefeasibility study continues with bulk sample assessment, groundwater studies and mine site planning.

#### CORPORATE

- Independent Technical Review of the Cyclone Heavy Mineral Deposit and Valuation Report released in January.
- Continuation of due diligence by BaoTi Group on participation in the Cyclone Project, including site visit in late March.
- \$7.1million Rights Issue to Shareholders completed early April.



BaoTi delegation visit to Cyclone – March 2011

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 zircon rich Cyclone HM Deposit in Western Australia, which is situated within the emerging world class Eucla Basin heavy mineral sands 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):  
354,597,423

Listed 15c options (30/09/13)(DRXO):  
88,650,039

Unlisted 47c options (30/06/11):  
16,800,000

Unlisted 47c options (31/07/11):  
3,000,000

#### Board of Directors

##### Executive:

Tony Fawdon - Chairman/CEO  
David Hall - Operations

##### Non-executive:

George White  
Andrew Tsang

##### Company Secretary:

Leni Stanley

#### Key Projects:

- Eucla Basin Heavy Minerals Project
- Clermont Copper Project
- Anabama Copper Project
- Bellfield Base Metals Project

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#### Share Registry:

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## Eucla Basin Mineral Sands (Zircon) Project - (DRX 100%)

During 2011, the Company continues to focus on the higher priority areas around Wanna/Cyclone (Figure 1). However, with the desert region experiencing over two years rainfall during January to March (including significant flooding and road closures), field activities could not recommence until late in the quarter.

### Cyclone Deposit

Drilling has now recommenced at Cyclone as part of the ongoing bulk sample field studies. In March, 33 holes were drilled for 1,215 metres using the Company's own rig. Results from infill drilling late in 2010 have confirmed the grade and continuity of the Cyclone site.

Normal mineral sand exploration in the region will commence once all the bulk sample and resource drilling is completed.

Pre-feasibility study ("PFS") activities during the quarter continued with emphasis being placed upon preparations for targeting groundwater supplies to support a mining operation. Plans are also in hand to work with the Pila Nguru traditional owners to conduct cultural heritage surveys over potential water target areas and exploration drilling traverses.

A representative bulk sample for the preliminary mining reserve has been collected by conventional air core drilling from a drilling program during late March – early April 2011. The bulk sample was collected from the three ore zones (dune, beach and nearshore) comprising the currently defined mine pit design. Once the sample has been composed, metallurgical testwork will include ore characterisation by zone followed by wet and dry mineral separation testwork to provide the final recovery, product quality, and process flowsheet data for the Prefeasibility Study.

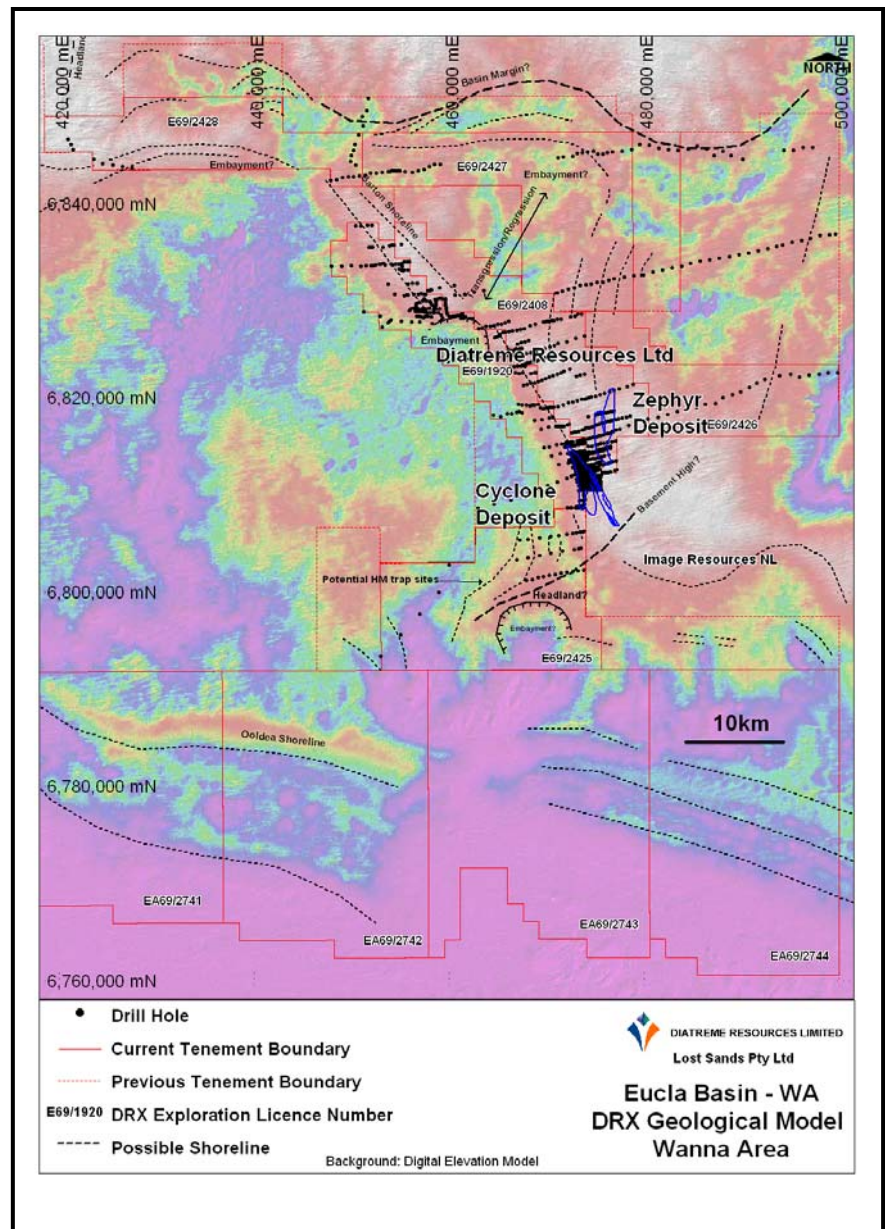


Figure 1: Location Map of Eucla Basin (WA) tenements in vicinity of Cyclone

Work has also been undertaken on addressing requirements for lodging a mining lease application over the deposit and for licenses to cover infrastructure requirements. Figure 2 presents a conceptual site layout plan for a proposed mining lease and associated infrastructure. Further work is being undertaken to fully establish leases and licenses needed for an initial mining operation at Cyclone.

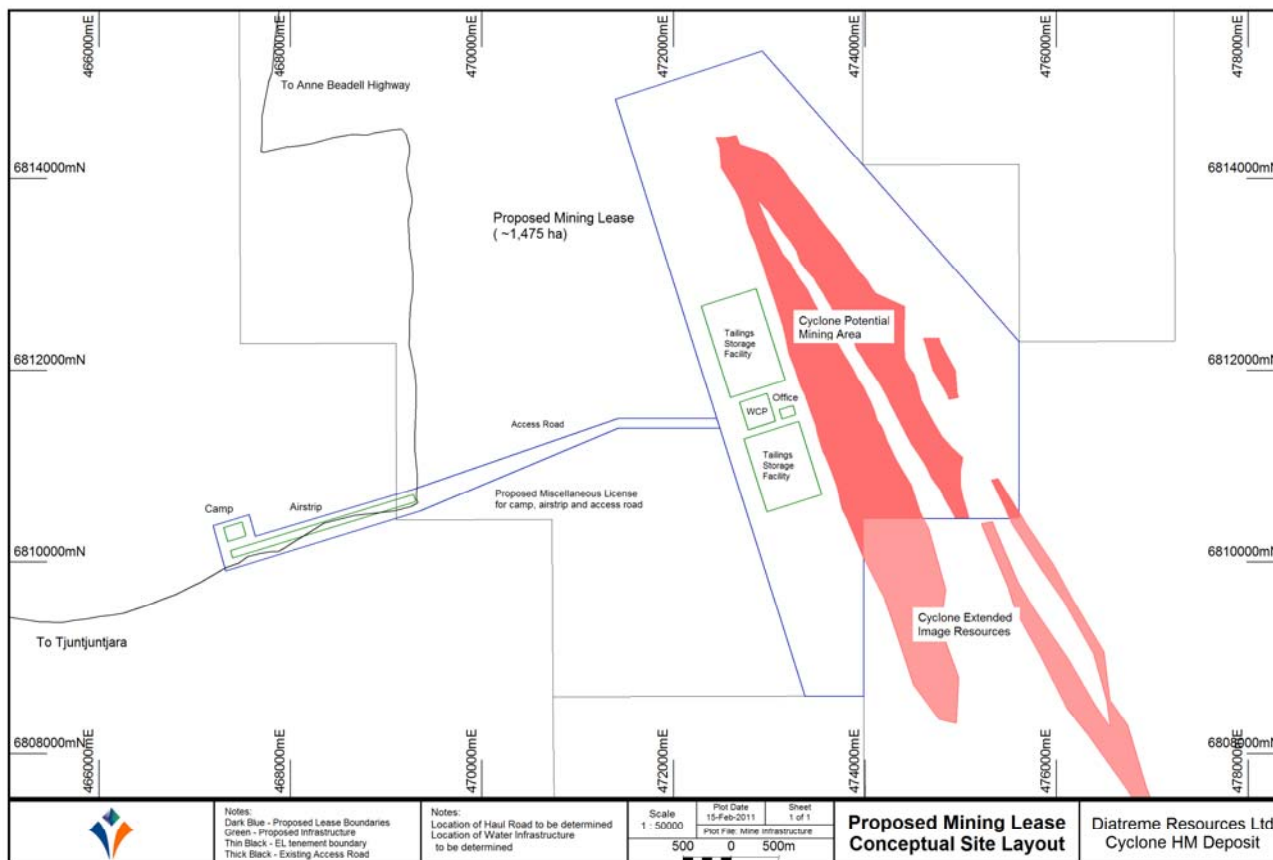


Figure 2: Cyclone Deposit proposed mining lease conceptual site layout

## Corporate

### During the quarter:

- As part of their due diligence process toward participation in the Cyclone HM Project, BaoTi Group Ltd conducted a field visit to the Cyclone Deposit in WA and Diatreme's Ceduna sample pre-prep laboratory.
- On 8/04/11, the Company announced the successful completion of a non-renounceable rights issue to shareholders, fully underwritten by Intersuisse Limited, which raised approximately \$7.1million through the issue of 88,650,039 ordinary shares and 88,650,039 listed options exercisable at 15 cents on or before 30/09/13.
- On 18/01/11, the Company released an Independent Technical Review of the Cyclone Heavy Mineral Deposit and Valuation Report prepared by Terrence Willstead & Associates. A summary of the important outcomes from the report were detailed in the section entitled "Post quarter" in the December 2010 quarterly report.





**Dated 20 April 2011**

**Anthony J Fawdon**  
Executive Chairman/CEO

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**Competent Person Statement**

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.

**About BaoTi**

- The leading zircon and titanium fabrication company in China and presently dominates Chinese exports in zircon and titanium end user products, having an 80% market share.
- China's biggest production, research and development base for titanium and its alloys, with its output of titanium mill products ranked second in the world.
- As a leader in technology and production and holding a significant domestic market share, it produces a wide variety of products made from titanium, zircon, tungsten, molybdenum and rare earth metals.
- Employs a workforce in excess of 7,000 personnel within its whole titanium industry chain which includes mining, smelting, rolling, downstream production and titanium equipment manufacturing.