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Subsidiary Companies: Lost Sands Pty Ltd ABN 27 101 269 747

Chalcophile Resources Pty Ltd ABN 41 090 712 217

Regional Exploration Management Pty Ltd ABN 55 093 739 336



ASX Code: DRX

Exploration Activities Report Quarter ended 31 March 2008

Highlights

HEAVY MINERAL SANDS PROJECTS

- **Announcement of the Cyclone Prospect, Western Australia, estimated Inferred Resource of 60 million tonnes grading 3.1% heavy mineral (HM) yielding 1.8 million tonnes HM.**
- **Ground exploration has recommenced in the Eucla Basin, South Australia, initially targeting the Willy Willy Prospect.**
- **Completion of HM drilling program on Flinders Island, Tasmania.**
- **Applications for three exploration licences over King Island, Tasmania.**
- **Grant of five exploration licences within the Arckaringa Project, South Australia.**

COPPER/GOLD AND BASE METAL PROJECTS

- **Drilling resumed at the Dooloo Creek Project.**
- **60 percent of 552 assays from previous Dooloo Creek drilling contained detectable gold with the best interval being 12m from 125m depth grading 1.38 g/t gold in drillhole DCRC04.**
- **Preliminary interpretation of final data from the 2007 Bellfield Project helicopter borne electro-magnetic ("VTEM") survey identified a number of potential conductive anomalies.**
- **A 970 line km VTEM survey was completed at the Anabama Project, with preliminary data indicating potential for conductive anomalies.**
- **Investigation of 66 interpreted anomalies ongoing at the Clermont Project.**

GENERAL

- **Exploration and evaluation expenditure for the quarter totalled approximately \$1.08 million with DRX holding \$7.98 million cash at end the quarter.**
- **Planned for 2008 – 73,000m of mineral sands drilling and 10,000m of copper/gold drilling.**

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EXPLORATION

Eucla Basin Heavy Mineral Sands (Zircon) Project – WA and SA (Lost Sands Pty Ltd - DRX 75% / MSC 25%)

Cyclone Heavy Mineral Prospect Inferred Resource

In February, Diatreme Resources Limited (DRX) announced an Inferred Resource for the Cyclone HM Deposit located at the Company's Wanna Lakes Project in the Western Australian sector of the Eucla Basin (see table below).

Cyclone HM Deposit Resource			
Resource Class	Mineralised sands (Million tonnes)	Heavy Minerals (%)	Heavy Minerals (Million tonnes)
Inferred	60.0	3.1	1.8

The resource estimate is classified as an Inferred Resource based upon criteria set out in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Technical details concerning the deposit, delineation drilling program and the resource estimation are presented in Appendix 1.

The deposit, as defined to date, comprises a number of heavy mineral strand systems covering an area of approximately 5.0 x 2.5 kilometres within EL69/1920 (Wanna Lakes). It lies within 25km of the WA/SA state border approximately 220km north of the transcontinental railway.

The Cyclone Deposit is attractive because limited analysis has indicated that the suite of minerals in the HM assemblage is dominated by high value zircon and leucoxene. Current average prices in Australian dollars for the heavy mineral commodity products are as follows:

Zircon	AUD833 per tonne	Leucoxene	AUD422 per tonne
Rutile	AUD555 per tonne	Ilmenite	AUD88 per tonne

From first indications, the deposit contains a HM fraction with minor Ilmenite, whereas the Hurricane Prospect mineralization, 30 kilometres north of Cyclone, contains a higher Ilmenite content.

Although this is the first discovery of a HM resource in the region, the 2007 drilling has shown that good potential exists to increase the size of the resource in (a) the immediate area, (b) on the northern extensions to the current inferred resource and (c) in a large beach / dune feature to the east.

DRX has calculated the inferred resource to the known sampled points with confidence, and the volume and grade of the resource are considered to be a conservative estimation of the whole mineralised envelope. Further resource drilling is anticipated to be carried on this resource.

The mineral assemblage of HM concentrate from the Cyclone Prospect is economically attractive. Mineralogical determinations conducted by Diamantina Laboratory indicate that the deposit contains Zircon (41%), Rutile (3%), Leucoxene (42%), Ilmenite (10%) and valueless trash minerals (4%).

DRX plans to return to the Wanna Lakes Project area and conduct further aircore drilling on the Cyclone Deposit and in the surrounding strand systems, strands which the Directors believe present high potential to host further significant HM mineralization. This drilling will follow the planned April 2008 drilling program to be completed at the Willy Willy HM Prospect in South Australia. The Company expects to commence access and drill line dozing in March 2008.

Exploration ground position in Western Australia

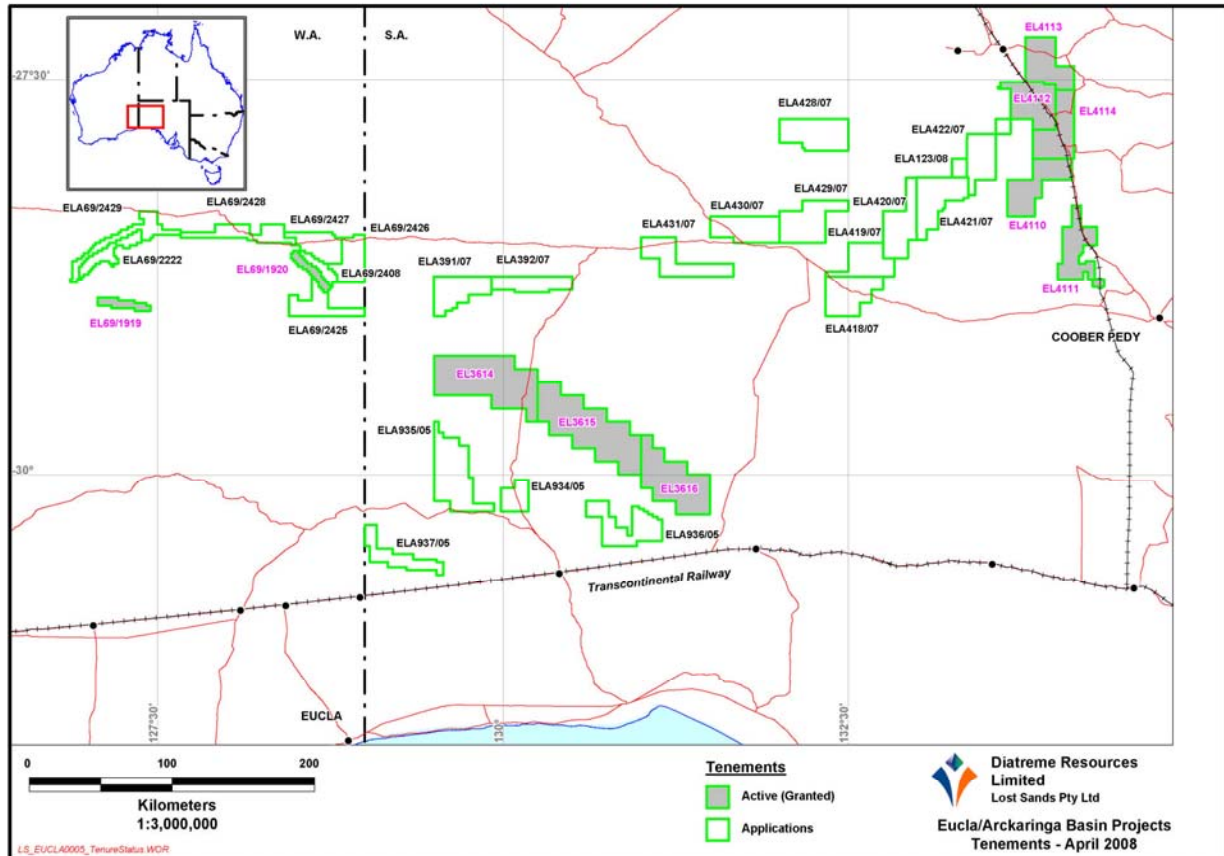
The Company has received advice that the WA government, under current policy, will not allow exploration within A Class Conservation Reserves. Accordingly, DRX has reluctantly withdrawn six of its exploration licence applications, four to the south of the promising Wanna Lakes Project and two to the west of the Jubilee Lakes North Project around Neales Junction.

South Australian Sector

Ground activities, including heritage surveys and access track construction, have recommenced in preparation for drilling at the Willy Willy Prospect.

Arckaringa Project (DRX 100%)

DRX has a number of exploration licence applications in the Arckaringa Basin. Five (ELs 4110 – 4114), located northwest of Coober Pedy, were granted late in the quarter. The Company proposes to conduct drilling for mineral sands and coal within the tenements following initial reconnaissance.



Eucla/Arckaringa Basin Project Tenements – April 2008

Flinders Island Heavy Mineral Sands Project (DRX 100%)

Drilling commenced on the 30 January 2008 with a total of 100 holes and 1,862 metres being drilled across both tenements; 38 holes for 836.5m on EL6/2007 and 62 holes for 1025.5m on EL7/2007. Drill spacing varied between 100m to 1km (depending upon geology) and line spacings were between 4 to 6km apart.

Several beach strands, identified whilst drilling, lie at 15 to 18m, 4 to 6m and 0.5 to 1.5m RL. These systems were thin and poorly developed which is not a favourable environment for abundant heavy minerals to accumulate. Only three samples were taken of 1-2% HM estimate and these were located only a few hundred metres from the current east coast shoreline, near the Patriarch Hills. Closer spaced drilling occurred around this mineralisation. However, the mineral did not develop into anything greater than 1m in thickness and 2% HM.

No further work is proposed on Flinders Island due to the disappointing results and the tenements are expected to be relinquished.



King Island Heavy Mineral Sands Project (DRX 100%)

Three exploration licences (EL's 7/2008, 8/2008 and 9/2008) have been applied for on King Island (Tasmania) covering a total land area of 554 sq km. The island is prospective for both heavy mineral sands (with a number of known occurrences on the island) and scheelite (tungsten). DRX plans to conduct exploration for both.

Other Mineral Sand Projects (DRX 100%)

DRX has exploration licence applications in place at Casterton, Victoria and Shark Bay, Western Australia.

Anabama Copper Project – South Australia (DRX 100%)

The South Australian government has approved the transfer of EL3548 and EL3932 from Goldrap Pty Ltd to DRX's copper focussed subsidiary, Chalcophile Resources Pty Ltd. On completion of the tenement purchase (originally announced in September 2007) DRX will issue ordinary shares in the Company to a value of \$300,000 to Huntley Custodians Limited.

A helicopter borne Versatile Time-Domain Electro-Magnetic ("VTEM") survey was completed over the two licences during the quarter. External consultants were engaged to geologically appraise the preliminary data results, following which an additional 69 line km of infill flight lines over several interesting anomalous areas were recommended. The total survey was completed over 970 line km. Detailed geophysical interpretations are being completed.

The rock chip, calcrete and soil samples collected during the previous quarter were submitted for assay, but returned no significant results. All data will be incorporated in to the Company's project database.

Future Work

The sub-economic resources at the Anabama Prospect (3.3 million tonnes grading 0.66% copper using a 0.3% cut-off grade) reported by Placer Exploration in 1994 are being reviewed and will be updated once further drilling is conducted in late 2008.

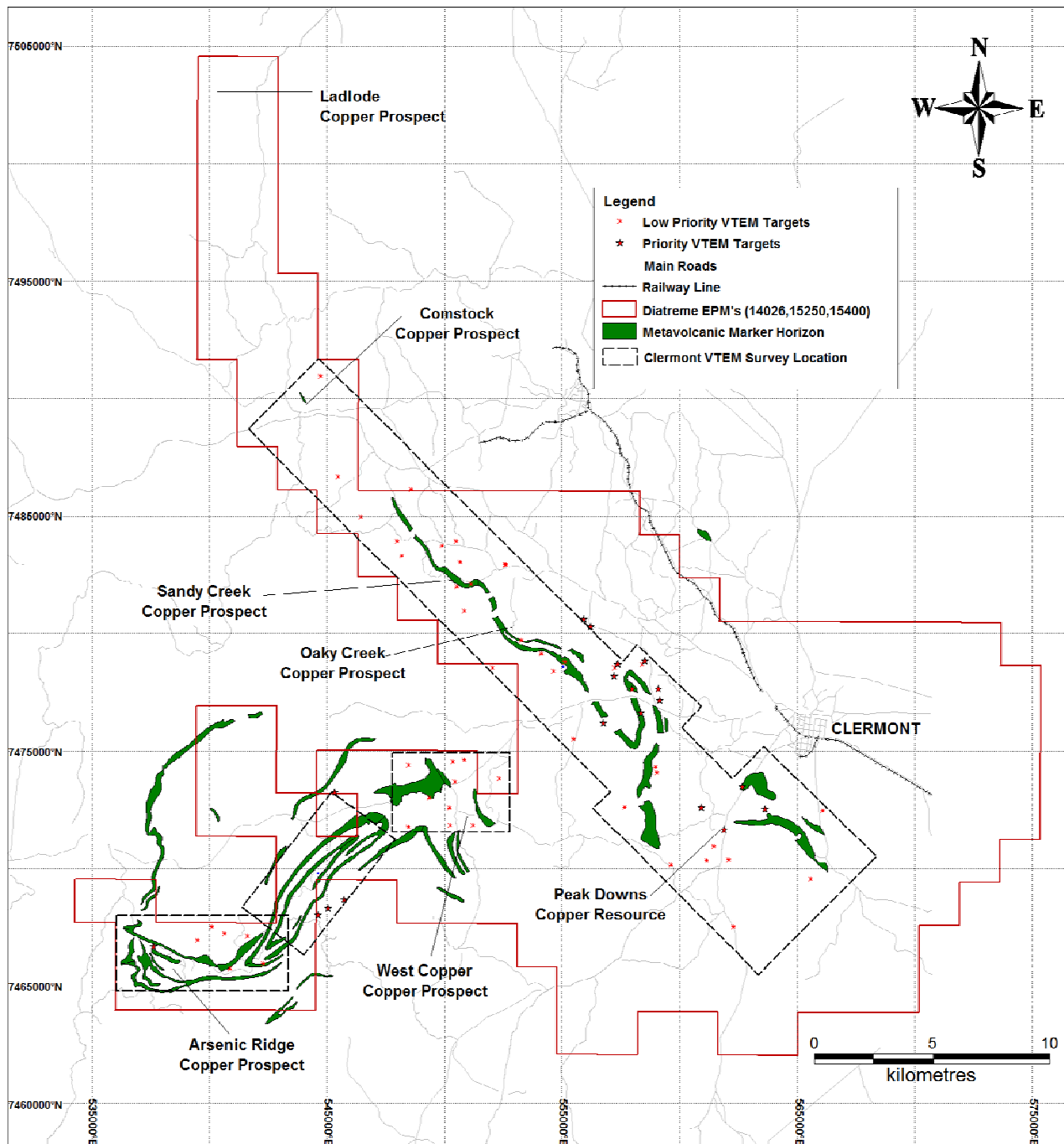
Bellfield Base Metals Project – Northern Queensland (DRX 50%, MSC 50%)

Final results from the helicopter borne Versatile Time-Domain Electro-Magnetic ("VTEM") survey conducted during the previous quarter were received in February. Limited in-house interpretation of the preliminary results has being undertaken and external consultants engaged to prepare a detailed interpretation.

Ministerial approval is still awaited for the granting of both EPMs 12868 "Bellfield" and 12888 "Gilbert River". The two permits form a roughly rectangular area approximately 63km long by 17km wide (1,100km²) and are centred approximately 100 km south of Georgetown. Preliminary on-ground exploration is scheduled to commence following grant.

Clermont Copper Project – Central Queensland (DRX 100%)

Interpretation of the 2007 helicopter borne Versatile Time-Domain Electro-Magnetic ("VTEM") survey has now identified 66 initial targets within the complete survey area. The assessment of these VTEM targets is ongoing and priorities being established through follow-up geological field investigations. The following figure shows the priority VTEM targets. It is expected that many of the initial targets will be downgraded due to cultural influences or conductive graphitic lithologies. However, there are a number of "late channel" anomalies that could indicate potential buried conductors; these will warrant further geophysical modeling before drill testing.



Clermont Copper Project – VTEM Survey location and priority VTEM targets

An internal review of the Peak Downs copper resource (previously determined and reported by Straits Resources Limited) is ongoing. The aim of the review is to “modernize” the resource to JORC compliancy, and to evaluate it in relation to current and forecasted economic outlooks for the copper industry.

Follow-up ground investigations, involving geological mapping and sampling over various VTEM anomalies commenced in January but were delayed until late March due to the severe wet weather conditions experienced in Central Queensland. Geological field investigations, including a stream sediment sampling program over the northern extend of EPM 14026, and a soil sampling grid over the Ladlode Prospect was completed during the later part of the quarter. This area, to the north of the Comstock Prospect, is poorly covered by previous and historical geological investigations.

**Future work**

An 8,400m drilling program is planned to commence during the next quarter. The initial drilling will concentrate on completing the previously delayed 2007 drilling program over the Comstock, Sandy Creek and Oaky Creek prospects. This will be followed by drilling programs targeting VTEM generated anomalies.

Further ongoing assessment and prioritization of the VTEM targets, including geological mapping, sampling and detailed ground magnetic surveys will continue.

Dooloo Creek Gold-Copper Project – Southeast Queensland (DRX 100%)

The Dooloo Creek Prospect comprises a large (4km x 2km) area of anomalous gold-copper mineralization in rock chips and bedrock (auger hole) samples. The prospect is interpreted to resemble the upper part of a Mount Morgan style mineralization system, having similar host rock age and lithologies, sulphide geochemistry and mineralization styles.

Assay results from the December 2007 drilling are consistent with the exploration model proposed for this prospect whereby near-surface mineralisation represents the upper halo of a potential gold-copper ore body.

A summary of the drilling results including best copper and gold intercept per hole follows:

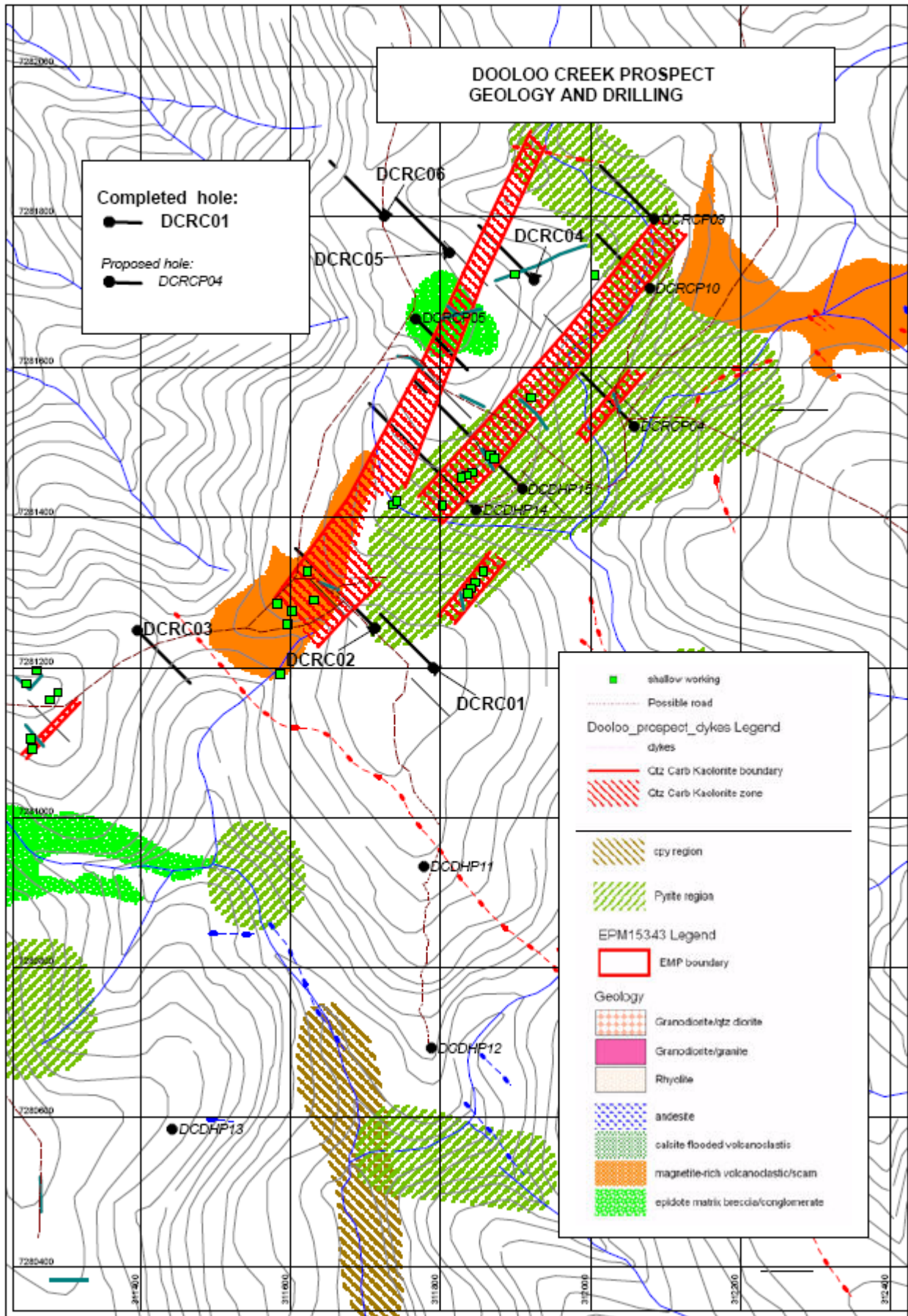
Hole Id	From (m)	To (m)	Width (m)	Au (g/t)	Cu (%)
DCRC01	71	75	4	0.28	-
	187	191	4	0.32	0.01
	<i>best Au intercept</i>	147	149	1.19	0.01
DCRC02	77	81	4	0.66	0.01
	<i>incl. best Au intercept</i>	79	81	1.11	-
	113	115	2	0.40	0.01
	133	137	4	0.63	0.03
DCRC03	169	171	2	0.10	-
	179	185	6	0.03	0.08
	<i>Incl. best Cu Intercept</i>	181	183		0.14
DCRC04	125	137	12	1.38	0.05
	<i>incl. best Au intercept</i>	125	127	2.63	
	<i>Incl. best Cu intercept</i>	125	127		0.10
DCRC05	47	55	8	0.03	0.03
	<i>Incl. best Cu intercept</i>	51	52		0.11
	127	131	4	0.05	0.04
DCRC06	43	47	4	0.02	-
	95	121	26	0.02	0.01

Over 60% of the 552 (two metre composite) assays from 2007 drilling contain detectable gold with the best interval being 12m @ 1.38 g/t Au from 125m in drillhole DCRC04.

Future work

The Company is undertaking deeper, follow-up drilling in 2008. The program, which commenced in mid April, consists of three (3) RC holes for 600m and 3 diamond core (DH) holes for 1,200m as summarised in the following table:

Proposed Hole	TYPE	Easting MGA	Northing MGA	AZMITH (deg)	DIP (deg)	Depth (m)
DCRCP04	RC	312058	7 281521	315	60	200
DCRCP09	RC	312091	7 281800	135	60	200
DCRCP10	RC	312079	7 281705	315	60	200
DCDHP11	DH	311778	7 280934	0	Vert	400
DCDHP12	DH	311442	7 280584	0	Vert	400
DCDHP14	DH	311847	7 281409	315	60	400



Dooloo Creek Project Geology and Drilling Program



CORPORATE AND FINANCE

General

Exploration and evaluation expenditure for the quarter totaled \$1,078,000. The Company held \$7,980,000 cash at the end the quarter.

Dated 30 April 2008

Anthony J Fawdon
Executive Chairman/CEO

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The information in this report, insofar as it relates to Exploration Results and Mineral Resources from the Company's mineral sands projects, is based on information compiled by Mr David Jelley, of David Jelley Pty Ltd, who is 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.

The information in this report, insofar as it relates to Exploration Results and Mineral Resources from the Company's copper and base metal projects, is based on information compiled by Diatreme Resources Ltd staff and reviewed by Mr Henning Coetzee, a fulltime employee of the Company, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Coetzee 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 Coetzee consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

APPENDIX 1 – Cyclone Deposit Technical Details

Geology

The Cyclone Deposit is made up of five mineralised strand systems which are believed to represent ancient beach placer deposits with associated dunal deposits. The sands are free flowing with very little induration (rock) and low slimes contents which are favourable to traditional mining techniques.

Drilling Program

- All drilling has been completed using contract drillers, Wallis Drilling Pty Ltd, using the NQ Air Core system of drilling.
- Discovered in July 2007.
- The delineation program in 2007 completed between July and October 2007. 337 vertical NQ Aircore drill holes for 16,450 metres of drilling and 1,716 samples analysed.
- The majority of drilling traverses spaced between 200 and 500m intervals and holes spaced between 50m and 100m apart, with some holes at 200m centres.
- All drill holes are vertical and all samples collected at 1.5m intervals collecting rotary split samples.
- All collars surveyed by GPS.
- The grade of heavy minerals for each sample was initially estimated by panning and visual estimation. Mineralised samples were initially submitted to Diamantina Laboratories for TBE HM separation and later to Consolidated Rutile Limited for standard LST analysis of total heavy mineral content.
- 52 samples were submitted to Diamantina Laboratory in Perth for mineralogical analysis.
- Drill hole, data spacings and geological continuity are recognised in the resource classification.

Resource Estimation

- The resource model has been constructed using Micromine Software.
- Drillhole database integrity, sampling, interpretation and logging validated by Diatreme Resources Limited geologists.
- Resource reported above 1% HM cut-off within nominal 1% HM envelope.
- Specific gravity of 1.6 applied to mineralised zone.
- The Cyclone Resource is up to 5.0km long and 2.5km wide. This resource estimate relates to only that portion lying within the Lost Sands Pty Ltd tenement boundary (EL69/1920).
- Sectional interpretation shows good continuity both along and across the trend of the deposit.
- The resource is classified as an Inferred Resource based on the criteria set out in the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC, 2004).

Note: The HM (Heavy Minerals) referred to in this report are all those minerals that have a density greater than 2.9 tonnes/cubic metre, as determined by heavy liquid separation. The amount of Valuable Heavy Mineral (VHM) such as Ilmenites, Rutile, Leucoxene and Zircon is determined by other methods. The HM% values do not imply that all of the HM is VHM.

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