

ASX

ANNOUNCEMENT

QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 March 2021

30 April 2021

Quarterly Highlights

Galalar Silica Project, Qld

- Galalar silica resource expands 30% to 61.9Mt in major boost for emerging premium quality silica mine in North Queensland
- New COO appointed to accelerate project, as Canberra stakeholder meetings highlight strong community support
- **Post-quarter:** Positive initial testwork results received for Galalar's definitive feasibility study, with results highlighting ability to produce premium product for fast-growing solar PV and other high-end glass markets

Cyclone Zircon Project, WA

- Talks continuing to formalise potential project participants' interests amid solid demand and constrained supply outlook for zircon and titanium.

Corporate

- Change of share registry to Automic, providing secure and highly accessible online investor portal
- Post-quarter: Notice of Annual General Meeting (AGM) issued for AGM to be held on 27 May 2021 at Diatreme's head office in Brisbane, Qld.

AUSTRALIAN SANDS. UNIVERSAL DEMAND.

DIATREME RESOURCES LIMITED | ABN 33 061 267 061 | ASX:DRX

+61 7 3397 2222

Unit 8, 55–61 Holdsworth St
Coorparoo, Qld, 4151

diatreme.com.au



COMING JUNE QUARTER ACTIVITIES

Diatreme's operational focus for the June quarter 2021 comprises the following:

- **Galalar Silica Project**
 - Further transshipment and logistics studies targeting most economical options for project with minimal environmental impact;
 - Further engagement with project partners, Hopevale Congress, affected native title holders and relevant regulatory/government agencies to advance project approvals and preferred logistics solution;
 - Progression towards formalised offtake or marketing agreements;
 - Finalising bulk sampling and testing for resource upgrades and mine planning for definitive feasibility study (DFS).
 - Lodgement of project draft EIS report for regulatory review
 - Further regional exploration programs to be advanced
- **Cyclone Zircon Project**
 - Continued progress regarding the assembly of an optimal mix of commercial parties to facilitate project's development or divestment, amid rising demand for zircon and titanium products.

GALALAR SILICA PROJECT, QLD

Diatreme's Galalar Silica Project saw further major advances in the March quarter 2021, amid continued growth in demand for the project's premium silica product.

In March, Diatreme announced a 30% increase in the project's total Mineral Resource, to an estimated 61.9Mt (refer ASX announcement 17 March 2021). The total resource covers an area of approximately 335ha with an average thickness of 18.8m, of which 99% falls within the Mining Lease Application area.

In addition, the Company has also identified large sections of the resource area contain inherently low Fe₂O₃ and further work is being undertaken to potentially optimise the resource and start up mining plan through detailed modelling of the low iron areas. This resource planning will allow targeting on mine start-up of the low iron formations within the dune structure to ensure target product specifications are achieved on first production.

Table 1: Resource Estimate, March 2021

JORC Resource Category	Silica Sand (Mt)	Silica Sand (Mm ³)	Cut-off SiO ₂ %	SiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %	TiO ₂ %	LOI %	Density (t/m ³)
Inferred	5.8	3.6	98.50	99.21	0.05	0.07	0.09	0.14	1.6
Indicated	20.6	12.9	98.50	99.20	0.05	0.08	0.07	0.14	1.6
Measured	35.5	22.2	98.50	99.27	0.09	0.12	0.10	0.10	1.6
Total Inferred + Indicated + Measured	61.9	38.7	98.50	99.24	0.07	0.11	0.09	0.12	1.6

**Resource estimate current as of 15 March 2021.*

Work continued during the quarter to advance Galalar’s regulatory approvals, with the Company intensifying its engagement with key stakeholders including the traditional owner representatives, Government and other members of the community.

In February, Diatreme and representatives of the Hopevale Congress Aboriginal Corporation (RNTBC) and affected native title holders (Thiithaar steering committee) met with key Commonwealth Government ministers in Canberra concerning the project.

Cairns-based, the Hon. Warren Entsch MP and his office facilitated meetings with the Hon. Ken Wyatt AM, MP, Minister for Indigenous Australians and the Hon. Sussan Ley MP, Minister for the Environment. The meetings introduced Diatreme and the Galalar project to the ministers, highlighting the project’s benefits including the creation of approximately 110 FTE jobs for the local community and an economic injection of up to \$42 million during its operation (refer ASX release 8 April 2020).

The project has high Indigenous employment targets and offers a genuine ‘closing the gap’ opportunity, with a direct equity stake of 12.5% ensuring affected native title holders benefit from its development.

Hopevale Congress Chairman, Willie Gordon commented: *“We would like to thank the Hon. Warren Entsch MP for co-ordinating and arranging these meetings. He has a deep and long-term understanding of the importance of regional development and the positive effects well managed and sensibly developed opportunities such as Galalar can have on local communities for current and future generations, with long-term benefits including employment, training, investment and commercial participation.”*



In February, Diatreme hosted a broad-based community consultation meeting in Hope Vale as part of the social impact assessment process (SIA), supported by independent specialist consultancy Coffey Ltd.

The meeting was well attended by representatives of Hopevale Congress Aboriginal Corporation (RNTBC), affected native title holders including regional clan groups and interested town residents. Additional meetings were also held in Cairns, for members of the Hope Vale community who reside in the Cairns region, and with a neighbouring clan group that may be affected by the project.

The SIA process forms a key component of the project's environmental impact statement (EIS) studies and is designed to assess project impacts on native title holders, community members, and residents from Hope Vale and Cooktown and regionally.

The SIA is to be accompanied by a Social Impact Management Plan that details proposed mitigation and management.

Downstream opportunities

While Diatreme remains focused on Galalar's permitting and approval process, the Company is also evaluating potential opportunities for downstream processing or manufacturing to add further value to the project's premium quality silica product.

Following the community meetings in Hope Vale, with assistance from Queensland's Department of Regional Development, Manufacturing and Water and the Townsville City Council, Diatreme undertook various site visits in Townsville, a regional industrial development hub.

The site visits examined potential available land and supporting infrastructure (access to power, water, gas etc) for future potential downstream processing or manufacturing opportunities to value add.

The Company is actively examining this potential for a portion of its currently planned mine product, a low iron (sub 100 ppm Fe) silica product, to undertake a further beneficiation process. This would likely be through a hot acid immersion process to produce an ultra-low iron (sub 50ppm Fe levels) silica product used in high-end, high value electronics manufacturing and other specialist uses.

In conjunction with this initiative, the Company has consulted with various parties considering establishing onshore glass manufacturing operations to supply the solar panel market and who require reliable supply of the high-quality photovoltaic grade silica used as direct feed product for the solar panel sheet glass manufacturing process. The Company will update the market as these discussions progress.

Diatreme continues to engage with a range of potential offtake and other parties to maximise the value of the Galalar project for the benefit of all stakeholders.

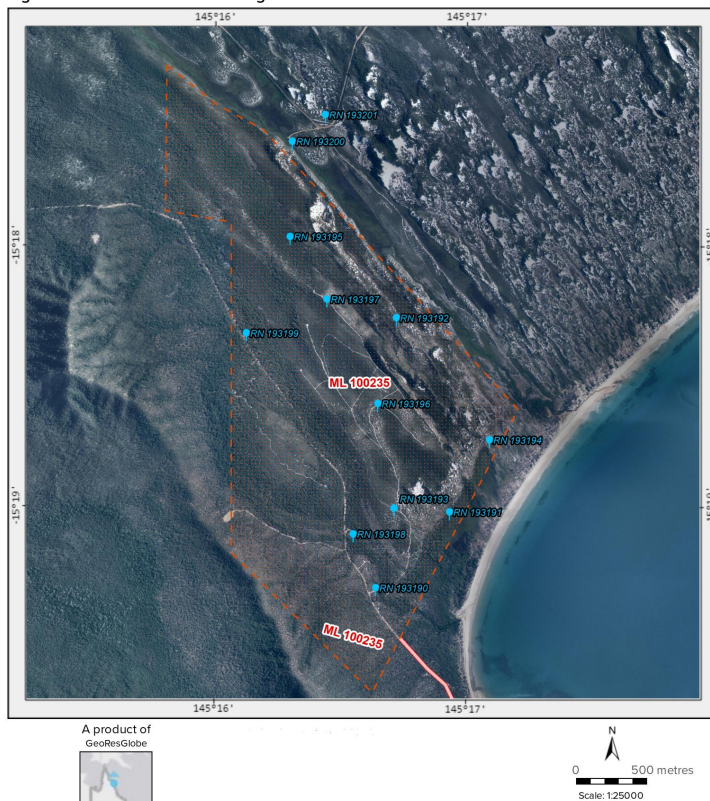
In January 2021, Diatreme announced the successful completion and installation in late December 2020 of 12 groundwater monitoring bores. The new bores will facilitate the detailed hydrogeological studies and baseline water quality assessments required for the EIS process.

The first stage of the groundwater monitoring program was completed using both Diatreme's air-core drill rig and a specialist water bore rig from FNQ Drilling and a registered water bore driller. Leading independent technical services firm Golder Associates Pty Ltd (Golder) supervised the technical component of the monitoring and will monitor groundwater movements following the start of the regional wet season in January/February 2021.

A draft technical study was completed by Golder in early 2020 to provide a preliminary assessment of the surface water and groundwater conditions at the project area. To determine the groundwater regime, a series of groundwater monitoring bores was proposed to provide background information and data. Golder proposed an initial installation of shallow monitoring bores including across the project area:

ML 100235 Application

Registered Groundwater Monitoring Bores



In January 2021, Diatreme announced plans to explore two high priority silica sand areas near Cape Flattery, with the potential for further resource expansion at the Galalar project (refer ASX release dated 25 January 2021).

The new targets are located near the Mitsubishi-owned Cape Flattery mine, the world's largest operating silica mine, and its associated infrastructure such as port access. Significantly, these dunes could add significant silica sand to the current resource at Galalar.



Figure 2: Cape Flattery target locations (Note: All targets are within the DRX granted EPM 17795).

Note: The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration completed to date to estimate a Mineral Resource in accordance with the JORC 2012 Edition Guidelines. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

Cautionary Statement: An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade (or quality), relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource.



Metallurgical testwork

Post-quarter, on 8 April 2021 Diatreme announced it had engaged industry specialist Mineral Technologies (MT) to undertake final metallurgical testwork for the Galalar Silica Project's definitive feasibility study (DFS).

The testing program will use a one tonne bulk sample obtained using air core drilling over an area representing the first five years of the planned mining area at Galalar. Two variability samples from other areas within the first 15 years' mining will also be processed to finalise the process flowsheet.

The objective is to develop a process flowsheet using the physical mineral separation processes of screening, gravity, attritioning, classification and magnetic separation to produce a high purity, low iron silica product with a target grade of 99.9% SiO₂ and ≤ 100 ppm Fe₂O₃. The DFS metallurgical testwork will produce a balanced metallurgical flowsheet suitable for use in DFS level engineering plant design and estimation of process plant capital and operating costs.

Other goals of the testwork include determining high purity, silica final product specifications to be further used for continued marketing of the product, together with obtaining the overall yield of the high purity silica product from the ore that is planned to be mined.

The testwork process will involve screening at 710 μ m, MG12 spiral separation, high-energy attritioning, fines removal by up-current classifier and magnetic separation of the classifier underflow. The non-magnetic test fraction of the light minerals is the high-purity silica product. Once the testwork is completed, a technical report and product samples will be provided to Diatreme for use in DFS studies and reports. The test results are anticipated to be ready within 6-8 weeks for incorporation into the DFS study expected for release Q3 CY 2021.

On 22 April 2021, Diatreme announced positive first phase results from the initial testwork. MT has completed the first two stages (screening and spirals) of metallurgical testwork on the one tonne bulk sample for the project's DFS. The bulk sample was taken from air core drill holes across the first two years of the planned start-up mine area.

Results to date have exceeded expectations, showing positive results for particle size distribution and the reduction of impurities using only simple screening and spiral separators. These are key factors in developing a high quality product for the solar PV and other high-end glass markets, capable of attracting premium pricing.



Key testing results include:

- 99.6% of the bulk sample is within the 710 micron maximum particle size specification, ideal for glass plant direct feed material.
- 85% recovery of bulk sample to targeted product, with the 90-110ppm Fe₂O₃ range achieved from the spiral release tests.

Following this processing through the spirals and noting the highly encouraging results, the next steps in the metallurgical bulk sample study process comprise:

- 1) Bulk sample to be put through an attritioning process to release remnant coatings;
- 2) The sample will be passed through an up-current classifier to remove fine particles and contaminants released during attritioning;
- 3) Bulk sample to be processed through a wet magnetic process.

At each stage sampling and assaying will be undertaken on the bulk sample product stream to ascertain the effects of each process. From this work, final plant design and process equipment can be effectively designed to ensure the best results are achieved from an eventual site-based processing plant and equipment, together with the desired silica product specifications during mine production, with a particular focus on mine start-up.



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CYCLONE ZIRCON PROJECT, WA

Diatreme continued discussions during the quarter with potential project participants with the aim of maximising shareholder value from the Cyclone Zircon Project.

The Company continues to strive actively to ensure an appropriate project value and shareholder return is achieved from any potential third-party project interest.

However, there is no question the restrictions imposed on international travel due to the COVID-19 pandemic have hampered the ability for interested offshore parties to complete site due diligence visits to the proposed mine site and allow finalisation of potential offers into more binding arrangements.

Constrained supply of high-grade zircon and solid demand still underpin the project's fundamentals, with the global economy projected to pick up speed in 2021 as COVID-19 vaccines are distributed worldwide and recovering economies drive ambitious growth targets that focus on infrastructure driven programs.

Cyclone's principal products of zircon and titanium remain linked to economic and construction activity generally and have significant uses in renewables (wind, solar, nuclear, batteries) which remain an important priority in increasingly de-carbonised world economies.

Diatreme continues to actively examine the potential for Cyclone's holding vehicle, Lost Sands Pty Ltd to be annexed into a separated process (potentially not dilutionary to Diatreme shareholders) to unlock value. The Company is advanced in discussions to assemble this and other potential project development options concurrently with its other existing initiatives and will keep the market fully informed when these potentially transition to a more formally documented process.

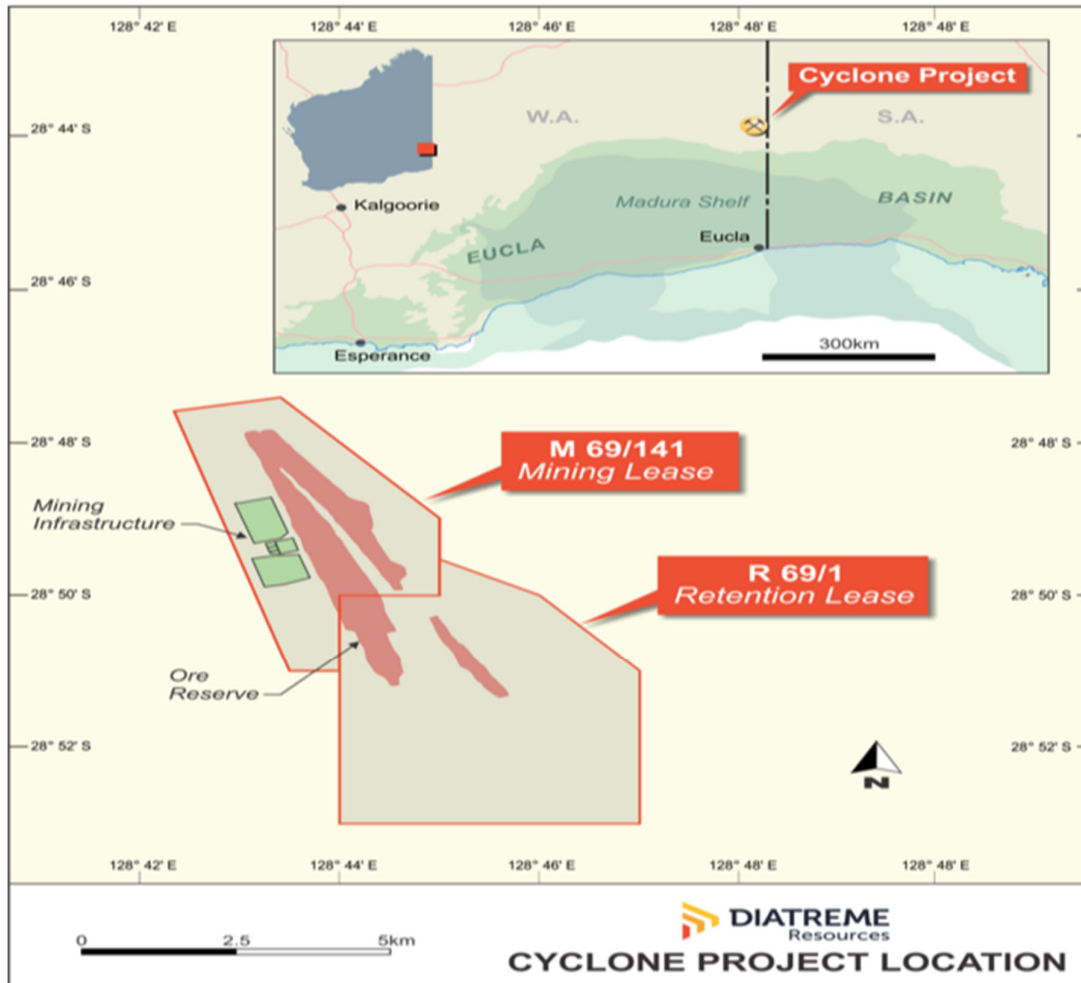


Figure 5: Cyclone project location



CLERMONT COPPER-GOLD PROJECT, QLD

Diatreme management and external consultants continue to review the Clermont Copper-Gold Project, particularly the Rosevale Porphyry Corridor, to determine its potential for further exploration, disposal or joint venture. This follows a surge in copper prices to 10-year highs and continued high gold prices, particularly in Australian dollar terms.

CORPORATE

New COO appointed

In February, Diatreme appointed globally experienced mining executive, Peter Brown, as Chief Operating Officer (COO) to further advance the Company's key Galalar Silica Project.

Mr Brown has more than three decades' experience both in Australia and internationally in senior project management roles in the resources sector, with an emphasis on business improvement and ensuring successful project delivery from greenfield to production in multiple commodities. Importantly for Diatreme, his experience encompasses proactive engagement with the community including traditional owners, with a strong track record of collaboration and enhancing safety management.

Recent experience has included various senior management roles for Round Oak Minerals (a subsidiary of WH Soul Pattinson), including contributing to its North Queensland projects (copper-gold mines). He has also served in a senior project management role at international consultancy Golder Associates, as well as various roles including General Manager on mining projects in Asia and South America.

Mr Brown's qualifications include a Bachelor of Applied Science (Geology) from UTS, Civil and Groundwater Engineering Studies (UNSW) and various project management studies, together with being a qualified Senior Site Executive (SSE) in Queensland.

Change of share registry

Effective 1 February 2021, Diatreme changed its share registry provider to Automic Pty Ltd.

The share registry's contact details are as follows:

Level 5, 126 Phillip Street Sydney NSW 2000
GPO Box 5193 Sydney NSW 2001

Shareholders can easily and efficiently manage their holdings via Automic's secure and highly accessible online investor portal. The portal provides, among other things, an online interface to update and manage shareholder details, view balances and transaction history.



Shareholders that are not already a user of Automic's investor portal may visit <https://investor.automic.com.au> and sign up to register their details using the two simple steps provided in the setup process.

Shareholders with any queries in relation to their Diatreme Resources Limited holding are advised to contact Automic at hello@automicgroup.com.au or on 1300 288 664 (within Australia) or +61 2 9698 5414 (outside Australia).

Annual General Meeting

Post-quarter, Diatreme announced its Annual General Meeting will be held from 2pm (AEST) on 27 May 2021 at the Company's head office in Brisbane.

In light of the evolving COVID-19 situation and State government restrictions on public gatherings in place at the date of this Notice of Meeting, the Directors strongly encourage all shareholders to lodge a directed proxy form prior to the meeting.

Shareholders are urged to vote by returning a completed proxy form, which must be received by no later than 2pm (AEST) on 25 May 2021. Refer ASX announcement 26 April 2021 for a copy of the Notice of AGM and proxy form.

Other Corporate items

During the quarter the Company made payments totaling \$104k to related parties and their associates representing Directors' remuneration and specialist market and consultancy services.

The Company's cash position as at 31 March 2021 totaled \$4.07m.

This announcement was authorised for release by:

Neil McIntyre

Chief Executive Officer

Greg Starr

Chairman

Contact – Mr Neil McIntyre - Ph – 07 3397 2222

Website - diatreme.com.au

E-mail - manager@diatreme.com.au

For media queries, please contact:

Anthony Fensom, Republic PR

anthony@republicpr.com.au; +61 (0)407 112 623



MINERAL SANDS AND SILICA - COMPETENT PERSON STATEMENTS

The information in this report that relates to Mineral Resources at the Cape Bedford Project (including the Galalar Silica Project) is based on information compiled by Bryce Mutton from Ausrocks Pty Ltd who has significant experience in Industrial Minerals and Quarry Resource assessments.

Bryce Mutton has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking 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 (The JORC Code). Bryce Mutton consents to the inclusion in the report on the matters based on their information in the form and context in which it appears.

The information in this report that relates to Exploration Results and Exploration targets from the Cape Bedford Project is based on information reviewed and compiled by Mr. Neil Mackenzie-Forbes, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr. Mackenzie-Forbes is a director of Sebrof Projects Pty Ltd (a consultant geologist to Diatreme Resources Limited). Mr. Mackenzie-Forbes has sufficient experience which 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. Mackenzie-Forbes 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 report, insofar as it relates to Mineral Resources at the Cyclone Project is based on information compiled by Mr Ian Reudavey, who was a full time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. 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, insofar as it relates to Ore Reserves at the Cyclone Project is based on information compiled by Mr Phil McMurtrie, who is a director of Tisana Pty Ltd (a consultant to Diatreme Resources Limited), and a Member of the Australasian Institute of Mining and Metallurgy. 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.

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APPENDIX 1

Appendix 1 provides information required under ASX listing rule 5.3.3 for mineral exploration entities.

Interest in mining tenements at end of quarter

State	Tenement Name	Tenement ID	Status	Location	Interest	Holder
WA	Cyclone	M69/141	Granted	Eucla Basin	100%	LSPL
WA	Cyclone Extended	R69/1	Granted	Eucla Basin	100%	DRX
QLD	Clermont	EPM17968	Granted	Clermont	100%	CHAL
QLD	Cape Bedford	EPM17795	Granted	Hopevale	100%	DRX
QLD	Cape Bedford	EPM27265	Granted	Hopevale	100%	DRX
QLD	Cape Bedford	EPM27212 EPM27430	Applications	Hopevale	(Pending)	DRX
QLD	Cape Bedford	ML100235	Application	Hopevale	(Pending)	DRX

Beneficial percentage interests held in farm-in or farm-out agreements at end of quarter

State	Project Name	Agreement Type	Parties	Interest held at end of quarter	Comments
WA	Cyclone Zircon Project	Farm-out Heads of Agreement	LSPL and Perpetual Mining Holding Limited	94%	HoA announced Jan 2014, initial 6% farm-out completed 18 Sept 2014 – Subject to dilutionary non-contribution clauses.

Abbreviations:

M	Western Australia	Mining Lease	DRX - Diatreme Resources Limited
R	Western Australia	Retention Licence	CHAL – Chalcophile Resources Pty Ltd
EPM	Queensland	Exploration Permit for Minerals	LSPL – Lost Sands Pty Ltd
ML	Queensland	Mining Lease	