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DIATREME Resources

ASX ANNOUNCEMENT

9 October 2023

Northern Silica Project development advances

Regulatory /Approvals

- **EIS specialist consultants on-site undertaking environmental and social impact assessments and background studies for Diatreme's Northern Silica Project (NSP).**
- **Application lodged with the Queensland Office of the Coordinator General for the North Queensland project to be designated a 'Coordinated Project'.**

Exploration

- **NSP and Casuarina Silica exploration targets updated using LIDAR imagery to increase accuracy and target definition.**
- **Exploration drilling underway, with simultaneous drilling programs utilising sonic and aircore drilling to complete infill and extension drilling as well as environmental water bore drilling.**
- **Bulk sample collection underway across the NSP Si2 resource area for metallurgical test work.**
- **Point Lookout Track (PLT) and Western Dune Ridges (WDR) exploration infill and step out augering confirms continuity of high purity silica sand dunes to the north and west of established resources.**

Emerging silica sands developer and explorer Diatreme Resources Ltd (**"Diatreme"**, **ASX:DRX**) continues to progress the development of its Northern Silica Project (NSP) in North Queensland, with regulatory approvals and exploration advancing amid continuing strong demand for high purity silica from the solar PV industry.

EXPLORATION RESULTS

Positive results from last year's hand auguring program at the PLT and WDR exploration targets has expanded on the first pass drilling and auguring program in the area, demonstrating further continuity of high purity silica sand

mineralisation in areas contiguous to the Si2 Resource Area. Resource exploration is focused on extensions located within and around the NSP for potential resource expansion.

The next steps for the PLT and WDR exploration targets are to complete a maiden mineral resource estimate in accordance with the JORC code from the exploration data available to date. Diatreme has commissioned this work via an external resource modelling group, targeting completion in November 2023.

Diatreme's CEO, Neil McIntyre commented: "*The Northern Silica Project is one of the world's purest silica sand projects of scale, and it's pleasing to see further resource consistency across the dune systems extending from our underpinning Si2 resource.*

"We are further encouraged to see additional regional upside adjacent to our proposed mining development, with our resource essentially open on all sides, offering potential for further expansion of an already world class resource."

COORDINATED PROJECT APPLICATION

Diatreme has lodged an application with the Queensland Office of the Coordinator General (OCG) for the NSP to be designated as a 'Coordinated Project'. Such designation would enable the project's approvals stream to be coordinated by the Office of the Coordinator General and assessed under the State Development and Public Works Organisation Act 1971 (SD Act).

This follows the NSP being deemed a 'Project of Regional Significance' by the Queensland Government's Department of Regional Development, Manufacturing and Water pursuant to the Cape York Water Resources Plan (2019) (refer ASX release 3 August 2023). The designation confirmed the NSP's important economic and social impact for the region, allowing Diatreme to apply for a future water entitlement.

In June, the Queensland Government launched the "Queensland Critical Minerals Strategy" which included the potential development of a critical minerals hub for silica sand around Cape Flattery.

Diatreme is now actively engaged with the Office of the Coordinator General (OCG) and has been participating in meetings to assist in the development of a "Cape Flattery Critical Minerals Zone" with OCG and other regional proponents in the area as this strategy continues to advance. Such an initiative has the potential to fast-track development of a mineral vital to the solar power industry, unlocking increased economic and social value for the people of Queensland and local stakeholders including First Nations communities.

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ENVIRONMENTAL IMPACT STATEMENT (EIS) UPDATE

Field work for the NSP's Environmental Impact Statement (EIS) is progressing with specialist consultants on-site undertaking environmental, social impact assessments and background studies. The scope of work for the EIS has been split into the following elements:

- Aquatic Ecology
- Coastal Environment
- Surface Water and Flooding
- Groundwater
- Soils and Geology
- Terrestrial Ecology
- Cultural Heritage
- Social Impact
- Air and Noise
- Economics
- Transport
- Progressing Rehabilitation and Closure Plan (PRCP)
- Landscape and Visual

EIS studies are advancing in parallel to the finalisation of the draft Initial Advice Statement (IAS) and Terms of Reference (ToR) for the NSP. These are now well advanced and undergoing further checks in preparation for the public lodgement process.

SONIC DRILLING

In September 2023, Diatreme commissioned Groundwave Drilling Services to undertake an 18-hole sonic drilling program. Sonic drilling is the only known method to reliably produce a core of unlithified sands and is ideal for providing a minimally disturbed sample that preserves dune form layering and bedding, helping to understand the NSP's aeolian deposition processes.

All 18 holes will be converted into either monitoring or pumping bores, which are required for EIS monitoring purposes, as well as setting the baseline conditions for the NSP's Mining Lease Environmental Authority. The installation of the monitoring bores is being supervised by consulting hydrogeologists.

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Figure 1: *Sonic drilling rig completing groundwater bore drilling*

Figure 2: *Silica sand core retrieved from sonic drilling*

Si2 RESOURCE AREA INFILL DRILING

Diatreme is currently conducting an infill drilling campaign using a track mounted aircore rig. A total of 223 holes are planned across the NSP to increase geological confidence and better inform the continuity of the geological domains that can be processed into high purity silica sand.

The infill drilling program will provide bulk samples for the next stage of feasibility studies, and also test for geological continuity of mineralised zones within the dune system.

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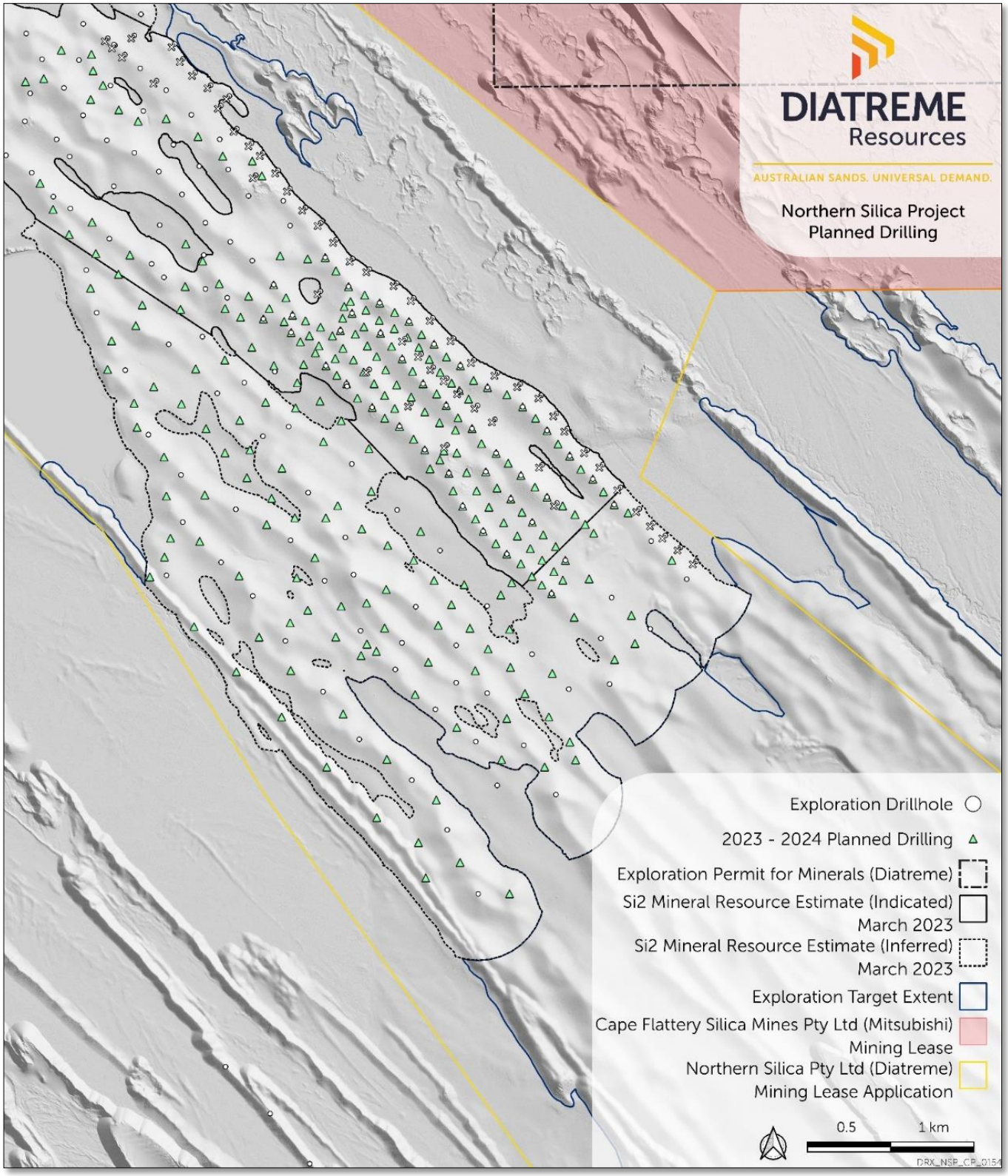

Figure 3: *NSP planned infill drilling program*

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EXPLORATION TARGET UPDATES

Following LiDAR capture earlier this year, Diatreme has utilised the Digital Elevation Model (DEM) to estimate the quantity of sand on the Casuarina Silica Deposit, PLT & WDR Exploration Targets, and the south-eastern extension to the Si2 Resource Area.

Cautionary Note: *The quantity and grade of the following exploration targets is conceptual in nature, and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.*

Diatreme plans to continue ongoing exploration adjacent to the NSP to further expand on its resources and reserves inventory, which will underpin future mine development.

Exploration Target	Tonnage Range	Grade Range
Casuarina Silica Deposit	70 – 240 Mt	98.5 - 99.9% SiO_2
PLT Exploration Target	55 – 190 Mt	
WDR Exploration Target	40 – 130 Mt	
Si2 Exploration Target	140 – 470 Mt	
Total	**305 Mt – 1.03Bt**	

Table 1: *Northern Silica Project and Casuarina Silica Deposit Exploration Targets*

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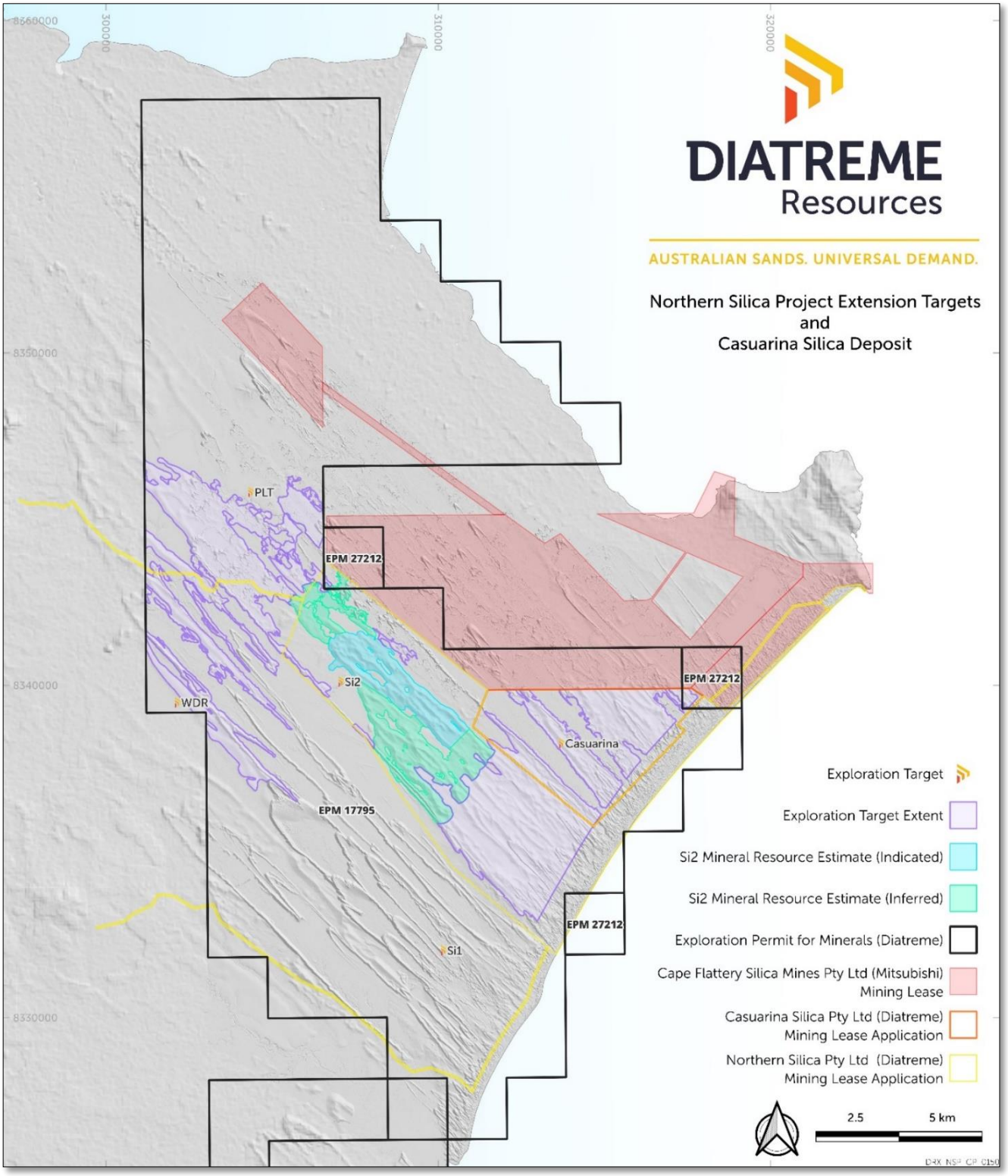

Figure 4: *Northern Silica Project and Casuarina Exploration Targets*

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CASUARINA SILICA DEPOSIT

The Casuarina Silica Deposit's dune features are interpreted from aerial photography and a LiDAR digital elevation model to represent a series of repeatedly reworked aeolian dune events. Based on geological observations from drilling and field mapping, it is assumed that there have been multiple podsolisation events causing metals to be eluviated from mineralised sands and deposited at variable depths.

The Casuarina Silica Deposit has been estimated following an interpretation of the geological landforms visible from the DEM, the proximity to CFSM mining faces and the results of 23 drilling samples. The Exploration Target is based on a geological model which assumes mineralisation from the topographic surface to a floor that has been interpolated from standing water bodies, the mined depth at the neighbouring Cape Flattery Silica Mines (CFSM) operation, and aerial observations of the B1 horizon, which tends to coincide with the water table across the dune field.

The model was constrained in the north-west by the CFSM Mining Lease, a 1km buffer from the coast in the south-east, and the intradunal gegenwalle features on the south-west and north-east. Most of the area has not been tested, with only five hand auger holes to an average of 4.5m, which represents the limits of the sampling equipment. Access constraints have prevented first pass drilling.

The estimation method utilised the DEM, the modelled floor, and the spatial boundaries to produce a volume, then multiplied by a density of 1.65c/cm^3 to produce an assumed upper limit of the tonnage range, to which a lower side discount of 30% has been applied. The resulting estimate is considered to host between 70Mt and 240Mt, with a likely grade of between 98.5% and 99.9% SiO_2 based on known grade from the CFSM operation, and the 23 drilling samples in the area.

<u>Timeframe to test Exploration Target</u>

Diatreme has plans to actively explore and evaluate the Casuarina Silica Deposit over the coming exploration programs, focusing primarily on conducting aircore drilling, field mapping, and metallurgical test work utilising a yet-to-be finalised methodology adopted by the NSP with the aim to achieve a targeted sub 90ppm Fe_2O silica product.

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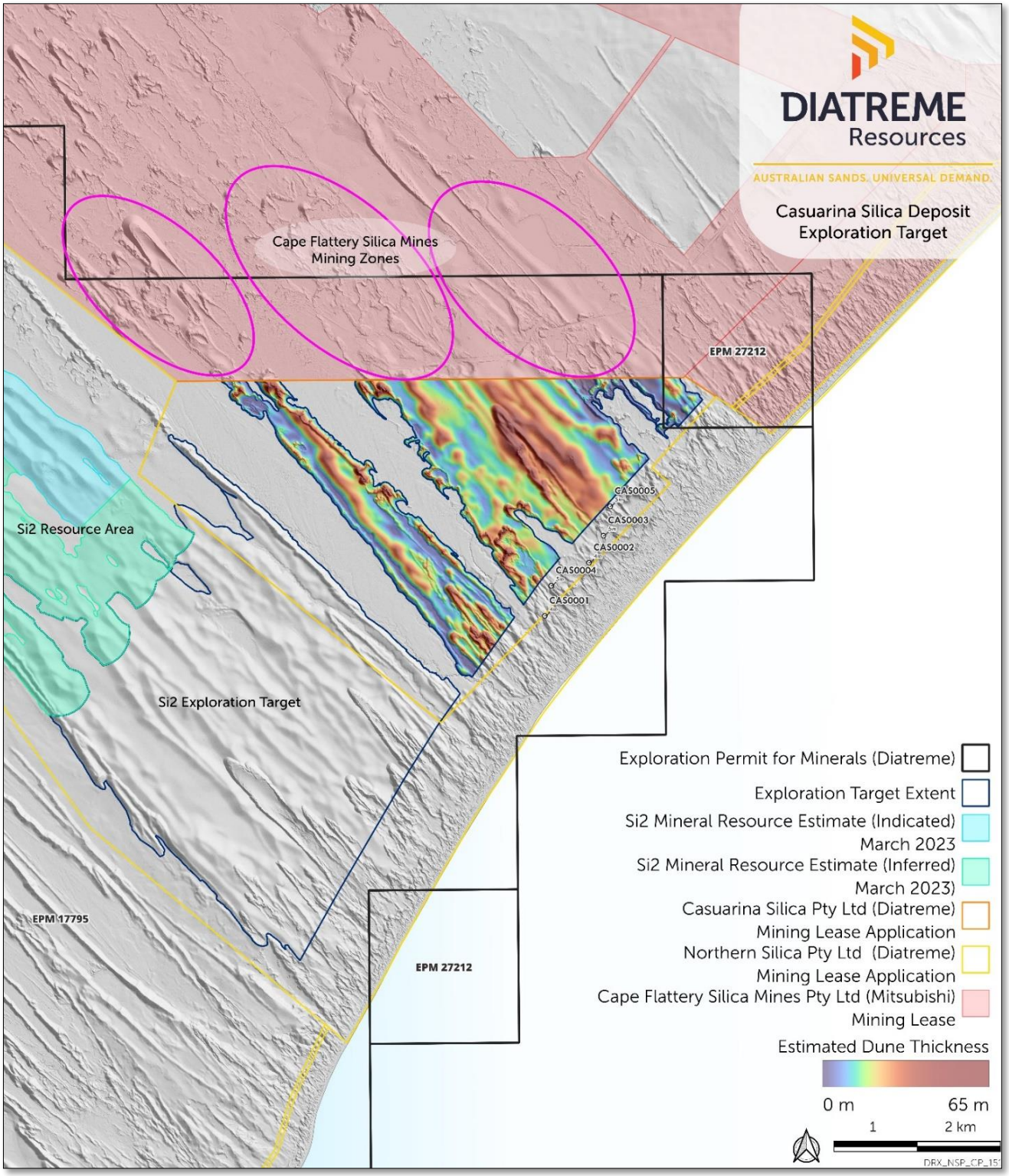

Figure 5: *Casuarina Silica Deposit exploration target*

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PLT AND WESTERN DUNE RIDGES EXPLORATION RESULTS

The PLT exploration target consists of a series of smaller and older dunes in the same north-west trending corridor that hosts the Si2 Dune Complex. Some of these older dunes have been remobilised into erratic dunes by more recent activity, whereas the WDR exploration target displays a more mature stabilised dune structure with a relative absence of recent dune remobilisation, hosted fully within the Si1 Dune Complex.

Diatreme initially commenced hand auguring in the PLT in late 2021, which resulted in an 89-hole, 357m sampling program through to the WDR in 2022. This method was used as a rapid cost-effective, first pass exploration method that enables a vast coverage of sample locations to confirm sand quality and continuity without the necessity to create access tracks for a drill rig.

The results indicated a north-western extension of high purity silica sand mineralisation contiguous with the existing Si2 Resource Area. These results will guide further targeted drilling campaigns to link the WDR and PLT and expand further north-west along the dominant dunes.

PLT AND WESTERN DUNE RIDGES EXPLORATION TARGETS

The PLT & WDR Exploration Targets have been estimated following an interpretation of the geological landforms visible from the DEM, and the geochemical results of drill samples. The Exploration Targets are considered contiguous with one another and the Si2 Resource Area.

They differ based on their geological characteristics, as the PLT area is a lateral extension direction down-wind of the Si2 dune complex, and the WDR Exploration Target is the lateral extension down-wind of the Si1 dune complex.

The geological features in the PLT Exploration Target highlight numerous active parabolic dunes superimposed on existing domed and weathered trailing arms of older elongate parabolic dunes, whereas the WDR Exploration Target tends to have preserved older dune features with a marked absence of active dunes.

The geological model assumes mineralisation from the DEM topographic surface to a floor that has been interpolated from standing water bodies. The model was constrained by the boundary of EPM 17795 in the west, the Si2 Mineral Resource in the east, and the gegenwalle feature that splits the Si1 and Si2 dune complexes.

The majority of the area has been tested by drilling (both hand auger and vacuum drilling), with 132 holes to a total of 821 metres in the PLT, and 121 holes to a total of 929 metres in the WDR.

The estimation method utilised the DEM, the modelled floor, and the spatial boundaries to produce a volume, then multiplied by a density of 1.65c/cm^3 to produce an assumed upper limit of the tonnage range, to which a lower side discount of 30% has been applied. The resulting estimate is considered to host between 55Mt - 190Mt, and 40 -

130Mt for the PLT and WDR Exploration Targets, respectively, with a likely grade of between 98.5% and 99.9% SiO_2 based on assay data in the area.

Timeframe to test Exploration Target

Diatreme has plans to finalise current exploration activities in the area in coming months, before evaluating its potential to be estimated as a Mineral Resource, prior to further exploration activities commencing.

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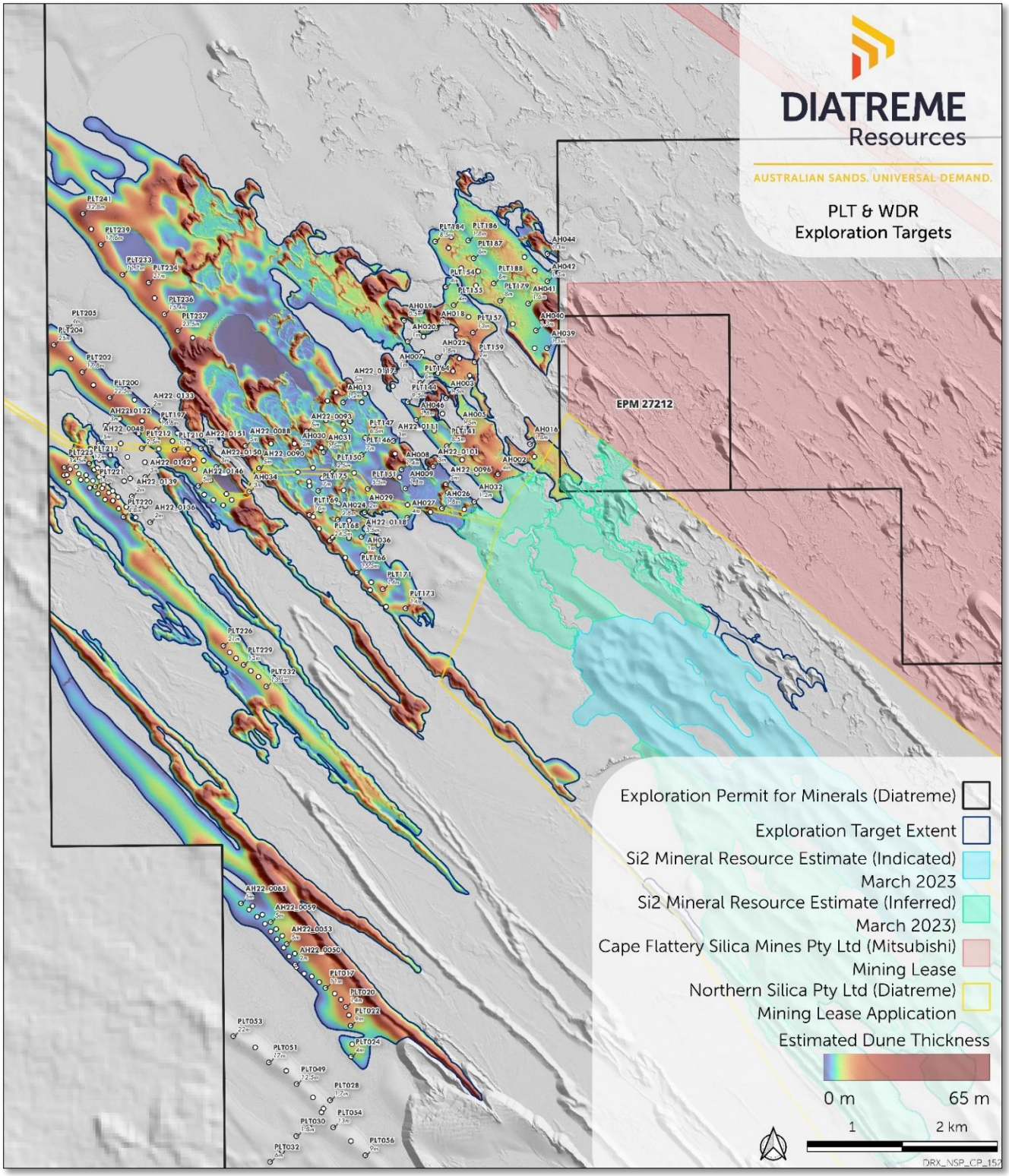

Figure 6: *PLT and WDR Exploration Targets*

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Si2 EXPLORATION RESULTS

The Si2 Dune Complex is a series of aeolian dune events increasing in age towards the north-west. Distance from the coast appears to be a proxy for a higher number of podsolisation events on a given body of sand, and a more amenable material for processing.

Diatreme received results from the Si2 in early 2023, on the tail-end of the drilling program used to estimate the March 2023 Si2 Mineral Resource update (refer ASX release 13 March 2023). These drillholes were the beginning of an infill program on the Si2 Resource, in order to better assess geological continuity in the northern end of the dune. The details can be found in Table 4 in the body of this announcement.

Si2 EXTENSION EXPLORATION TARGET

The Si2 Exploration Target has been estimated following an interpretation of the geological landforms visible from the DEM, and the results of 4,054 drilling samples, across 247 drill holes. The Exploration Target is based on a geological model which assumes mineralisation from the DEM surface to a floor that has been interpolated from standing water bodies.

The model was constrained in the south-west by the gegenwalle features that split the Si2 and Si1 dune complexes, in the north-west by the Si2 Resource Area, a 1km buffer from the coast in the south-east, and a standing body of water in the north-east. The area has not been tested, however mineralised silica sand can be observed in aerial photography at surface. Drilling has not yet been possible due to access constraints.

The estimation method utilised the DEM, the modelled floor, and the spatial boundaries to produce a volume, then multiplied by a density of 1.65c/cm^3 to produce an assumed upper limit of the tonnage range, to which a lower side discount of 30% has been applied. The resulting estimate is considered to host between 140Mt and 470Mt, with a likely grade of between 98.5% and 99.9% SiO_2 based on assay data in the greater NSP area.

Notably, this area excludes the existing Si2 Mineral Resource in the NSP, with the target falling wholly outside of the current Si2 MRE.

<u>Timeframe to test Exploration Target</u>

Diatreme has plans to test the area using an aircore rig, targeting an end of hole depth, either the first layer of illuviated clays or the water table. The size and scale of this exploration program is yet to be determined.

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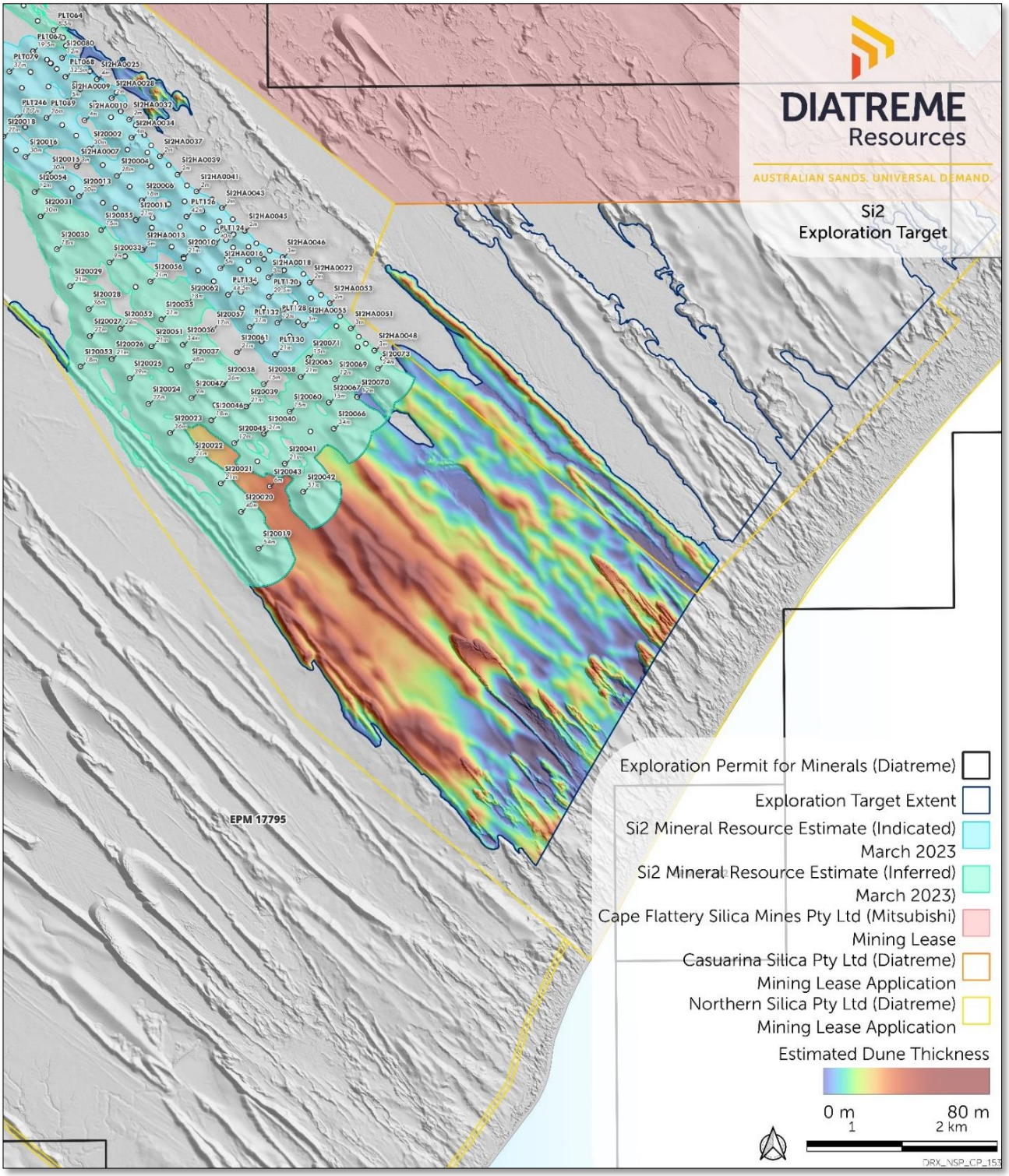

Figure 7: *Si2 Extension exploration target*

Diatreme's latest advances at the NSP follow a positive Scoping Study (refer ASX release 14 June 2023) which showed the potential for a valuable long life mining operation of significant scale and in close proximity to existing marine infrastructure. The study showed a pre-tax NPV of $1.4 billion and a pre-tax IRR of 33% over a 25-year mine life, based on a high purity silica sand production target of 121 million tonnes from the current 235 Mt of Mineral Resources.

In July, Diatreme announced the signing of a non-binding offtake MOU with FLAT Glass, one of the world's largest manufacturers of PV grade glass used in solar panel manufacturing. Diatreme's CEO, Mr McIntyre and Director William Wang recently visited China to inspect FLAT Glass' facilities and meet with major industry representatives, including attending the China Silica Industry Development Conference, one of the global industry's biggest events.

"The NSP continues to pick up speed and our recent visit to China showed the enormous scale of demand for our high purity, low iron silica product," Mr McIntyre said.

"The latest International Energy Agency data showed solar PV is driving rapid growth in renewable capacity worldwide, accounting for two-thirds of the increase this year and next. Our silica sand projects are extremely well placed to support this clean energy revolution, supporting global decarbonisation while contributing valuable new jobs and other economic benefits for the community of Hope Vale/Cooktown, including Traditional Owners."

This release has been authorised by the Board of Diatreme.

Neil McIntyre
Chief Executive Officer

Wayne Swan
Chairman

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About Diatreme Resources Ltd

Diatreme Resources (ASX:DRX) is an emerging Australian producer of mineral and silica sands based in Brisbane. Our key projects comprise the Northern Silica Project and Galalar Silica Sand Project in Far North Queensland, located next to the world's biggest silica sand mine at Cape Flattery.

In Western Australia's Eucla Basin, Diatreme's 'shovel-ready' Cyclone Zircon Project is considered one of a handful of major zircon-rich discoveries of the past decade.

Global material solutions group Sibelco is Diatreme's development partner on its silica sand projects in FNQ. Sibelco completed in December 2022 its first tranche investment ($11m) for a 9.99% interest, with a second investment tranche due in December 2023 ($24m) taking its total project interest to 26.8% at completion.

Diatreme has an experienced Board and management, with expertise across all stages of project exploration, mine development and project financing together with strong community engagement skills.

Diatreme's silica sand resources will contribute to global decarbonisation by providing the necessary high-grade silica for use in the solar PV industry. The Company has a strong focus on ESG, working closely with its local communities and all other key stakeholders to ensure the long-term sustainability of our operations, including health, safety and environmental stewardship.

For more information, please visit www.diatreme.com.au

References to previous ASX releases

- 3 October 2023 – Presentation at QEC Critical Minerals Investment Showcase
- 3 August 2023 – NSP granted Project of Regional Significance status
- 27 July 2023 – Quarterly Activities Report
- 13 July 2023 – Offtake MOU for Northern Silica Project
- 14 June 2023 – Positive Scoping Study for Northern Silica Project
- 13 March 2023 – Major silica resource expansion from 124Mt to 235Mt

Diatreme confirms that it is not aware of any new information or data that materially affects the information included in the original releases and that all material assumptions and technical parameters underpinning the estimates in the Page 5 of 5 original releases continue to apply and have not materially changed. Diatreme

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confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original releases.

COMPETENT PERSON'S STATEMENT

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Frazer Watson, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Watson is a full-time employee of Diatreme Resources.

Mr Watson has sufficient experience that 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 Watson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

FORWARD-LOOKING STATEMENTS

This document may contain forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "indicate", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions. Indications of, and interpretations on, future expected exploration results or technical outcomes, production, earnings, financial position and performance are also forward-looking statements.

The forward-looking statements in this presentation are based on current interpretations, expectations, estimates, assumptions, forecasts and projections about Diatreme, Diatreme's projects and assets and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made.

The forward-looking statements are subject to technical, business, economic, competitive, political and social uncertainties and contingencies and may involve known and unknown risks and uncertainties. The forward-looking statements may prove to be incorrect.

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Table 1: Existing Resource Estimate, Galalar Silica Project

JORC Resource Category	Silica sand (Mt)	Silica sand (Mm^3)	Cut-off SiO_2 (%)	SiO_2 %	Fe_2O_3 %	TiO_2 %	LOI %	Al_2O_3 %	Density (t/m^3)
Measured	43.12	26.95	98.5	99.21	0.09	0.11	0.16	0.13	1.60
Indicated	23.12	14.45	98.5	99.16	0.09	0.13	0.24	0.10	1.60
Inferred	9.22	5.76	98.5	99.10	0.11	0.16	0.27	0.11	1.60
Total**	75.46	47.16	98.5	99.18	0.09	0.12	0.20	0.12	1.60

Resource estimate current as of 13 September 2021, with no material change.

** Total inferred, indicated and measured

Table 2: Probable Ore Reserve, Galalar Silica Project

JORC Category	Silica Sand (Mt)	Silica Sand (Mm3)	Cut-off SiO_2 (%)	Waste (Mt)	SiO_2 %	Fe_2O_3 %	TiO_2 %	LOI %	Al_2O_3 %	Density (t/m^3)
Probable Ore Reserves	32.53	20.33	98.5	0.04	99.20	0.08	0.11	0.16	0.13	1.60

Resource estimate current as of 9 November 2021 – with no material change.

Table 3: Si2 Resource Area – Mineral Resource Estimate

JORC Resource Category	Silica Sand (Mt)	SiO_2 (%)	Fe_2O_3 (%)	TiO_2 (%)	Al_2O_3 (%)	LOI (%)	Total	Silica Sand (Mm^3)	Density (t/m^3)	Cut-off Grade SiO_2 (%)
Inferred	103	99.31	0.10	0.15	0.09	0.13	99.83	65.0	1.6	98.5
Indicated	132	99.27	0.11	0.15	0.12	0.13	99.90	82.0	1.6	98.5

Resource estimate current as of 13 March 2022 – with no material change.

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Table 4: Summarised Drill Hole Results & Details

HoleID	Easting	Northing	Collar RL	Hole Depth	From	To	Width	SiO2	Fe2O3	TiO2	Al2O3	Zr	LOI	Total
	GDA2020 Zone 55		m					%						
AH22_0047	301831	8343285	28	5	0	5	5	99.47	0.23	0.17	0.05		-0.09	100.13
AH22_0048	301708	8343407	29	5	0	5	5	99.36	0.08	0.09	0.03		0.01	99.83
AH22_0049	301695	8343151	27	3	0	3	3	98.95	0.17	0.18	0.06		0.26	99.98
AH22_0050	303774	8337924	27	2	0	2	2	98.94	0.13	0.30	0.09		0.23	100.07
AH22_0051	303711	8338012	28	3.5	0	3.5	3.5	98.71	0.18	0.33	0.11		0.46	100.15
AH22_0052	303770	8338042	34	5	0	5	5	98.38	0.23	0.40	0.10		0.57	100.09
AH22_0053	303687	8338143	35	5	0	5	5	98.66	0.20	0.31	0.10		0.40	100.05
AH22_0054	303653	8338104	29	4.5	0	4.5	4.5	98.96	0.11	0.24	0.09		0.28	100.00
AH22_0055	303581	8338191	29	4	0	4	4	99.02	0.11	0.31	0.09		0.12	100.00
AH22_0056	303638	8338228	36	5	0	5	5	99.03	0.16	0.32	0.10		0.08	100.00
AH22_0057	303574	8338299	34	5	0	5	5	98.75	0.22	0.45	0.12		0.11	99.96
AH22_0058	303517	8338275	29	4	0	4	4	99.36	0.19	0.44	0.11		-0.37	100.06
AH22_0059	303516	8338373	33	5	0	5	5	99.06	0.34	0.60	0.11		-0.12	100.34
AH22_0060	303456	8338355	29	5	0	5	5	99.14	0.25	0.56	0.11		-0.23	100.16
AH22_0061	303429	8338451	31	5	0	5	5	98.65	0.35	0.62	0.11		0.23	100.26
AH22_0062	303373	8338428	29	5	0	5	5	98.90	0.25	0.55	0.11		0.02	100.14
AH22_0063	303326	8338541	28	4	0	4	4	98.81	0.34	0.63	0.12		0.13	100.28
AH22_0064	303289	8338504	31	5	0	5	5	99.02	0.26	0.52	0.09		0.02	100.18
AH22_0065	303204	8338571	30	5	0	5	5	98.94	0.31	0.66	0.11		-0.01	100.26
AH22_0066	301714	8343235	26	2	0	2	2	99.15	0.19	0.13	0.02		0.17	100.05
AH22_0067	301622	8343348	28	5	0	5	5	99.37	0.11	0.06	0.01		0.20	100.14
AH22_0068	301800	8343152	26	2	0	2	2	99.32	0.16	0.14	0.03		0.17	100.20
AH22_0069	301750	8343081	29	4.5	0	4.5	4.5	99.17	0.20	0.29	0.05		0.10	100.18
AH22_0070	301911	8342844	27	2	0	2	2	98.72	0.15	0.16	0.03		0.60	100.05
AH22_0071	302096	8342629	26	2	0	2	2	98.89	0.19	0.26	0.04		0.34	100.15
AH22_0072	301998	8342740	27	2.5	0	2.5	2.5	99.14	0.17	0.21	0.07		0.10	100.13
AH22_0073	301854	8342908	31	4	0	4	4	99.06	0.20	0.22	0.03		0.23	100.13

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HoleID	Easting	Northing	Collar RL	Hole Depth	From	To	Width	SiO2	Fe2O3	TiO2	Al2O3	Zr	LOI	Total
	GDA2020 Zone 55		m					%						
AH22_0074	301804	8342999	27	3	0	3	3	98.85	0.20	0.24	0.03		0.50	100.23
AH22_0075	301933	8343153	26	3	0	3	3	99.44	0.10	0.08	0.01		-0.03	100.02
AH22_0076	301391	8342999	39	5	0	5	5	98.43	0.41	0.56	0.05		0.20	100.07
AH22_0077	301373	8343078	44	5	0	5	5	99.11	0.22	0.31	0.04		-0.10	100.04
AH22_0078	301342	8343073	46	5	0	5	5	99.59	0.15	0.16	0.02		-0.13	100.14
AH22_0079	301471	8343162	33	5	0	5	5	98.64	0.39	0.54	0.06		0.02	100.10
AH22_0080	301519	8343026	31	5	0	5	5	99.04	0.25	0.31	0.04		0.08	100.15
AH22_0081	301575	8343073	30	5	0	5	5	98.81	0.31	0.45	0.05		0.21	100.24
AH22_0082	301614	8342941	29	5	1	5	4	98.92	0.28	0.37	0.04		0.23	100.23
AH22_0083	301646	8343015	31	5	0	5	5	98.27	0.40	0.62	0.06		0.44	100.24
AH22_0084	301700	8342878	34	5	1	5	4	98.56	0.36	0.54	0.07		0.18	100.06
AH22_0085	301744	8342936	38	5	1	5	4	99.00	0.18	0.24	0.04		-0.02	99.67
AH22_0086	301775	8342817	38	5	1	5	4	98.84	0.20	0.26	0.04		0.05	99.65
AH22_0087	301545	8343266	44	5	1	5	4	99.07	0.17	0.27	0.05		0.05	99.90
AH22_0122	301780	8343595	27	3	0	3	3	99.19	0.20	0.35	0.02		-0.08	99.97
AH22_0123	301938	8343532	26	1	0	1	1	98.80	0.14	0.19	0.04		0.38	99.83
AH22_0124	301939	8343408	25	1	0	1	1	98.78	0.09	0.18	0.02		0.18	99.74
AH22_0125	302009	8343264	26	1	0	1	1	98.90	0.26	0.41	0.04		0.19	100.10
AH22_0126	302193	8343210	28	3	0	3	3	99.23	0.10	0.15	0.02		0.07	99.84
AH22_0127	302346	8343239	30	4	0	4	4	99.71	0.16	0.20	0.02		-0.52	99.89
AH22_0128	302522	8343211	48	5	0	5	5	99.48	0.19	0.32	0.04		-0.37	99.95
AH22_0129	302534	8343516	29	2	0	2	2	98.79	0.10	0.16	0.04		0.71	100.02
AH22_0130	302369	8343650	29	2	0	2	2	98.92	0.08	0.12	0.04		0.37	99.77
AH22_0131	302317	8343456	37	5	0	5	5	99.28	0.19	0.30	0.07		-0.04	100.01
AH22_0132	302127	8343510	29	3	0	3	3	98.92	0.10	0.14	0.05		0.51	99.90
AH22_0133	302233	8343754	27	2	0	2	2	98.68	0.09	0.14	0.05		0.67	99.84
AH22_0134	302083	8343865	27	2	0	2	2	99.12	0.07	0.10	0.02		0.35	99.87
AH22_0135	301931	8343669	28	3	0	3	3	99.11	0.17	0.12	0.04		0.36	100.10

HoleID	Easting	Northing	Collar RL	Hole Depth	From	To	Width	SiO2	Fe2O3	TiO2	Al2O3	Zr	LOI	Total
	GDA2020 Zone 55		m					%						
AH22_0088	303250	8343382	48	5	1	5	4	99.54	0.10	0.12	0.03		0.01	100.08
AH22_0089	303520	8343405	42	5	0	5	5	99.52	0.06	0.07	0.03		-0.02	99.91
AH22_0090	303393	8343145	41	5	0	5	5	99.14	0.12	0.15	0.03		-0.02	99.71
AH22_0091	303767	8343406	56	5	0	5	5	99.26	0.19	0.25	0.04		0.01	100.04
AH22_0092	304049	8343362	45	5	0	5	5	99.13	0.17	0.11	0.04		0.10	99.95
AH22_0093	303894	8343536	50	5	0	5	5	99.34	0.22	0.08	0.04		-0.03	99.98
AH22_0094	304284	8342914	52	5	0	5	5	99.07	0.15	0.15	0.04		0.12	99.89
AH22_0095	305197	8342687	40	5	0	5	5	99.26	0.11	0.14	0.05		-0.02	99.82
AH22_0096	305359	8342978	62	5	0	5	5	98.38	0.32	0.48	0.06		0.11	99.73
AH22_0097	305806	8342479	36	3	0	3	3	98.75	0.14	0.09	0.03		0.52	99.82
AH22_0098	305682	8342449	46	5	0	5	5	98.81	0.12	0.15	0.04		0.29	99.74
AH22_0099	305662	8342698	36	2	0	2	2	99.23	0.09	0.11	0.04		0.04	99.86
AH22_0100	305628	8342620	43	5	0	5	5	99.14	0.20	0.17	0.05		0.08	100.01
AH22_0101	305227	8343166	36	3	0	3	3	99.35	0.14	0.08	0.03		-0.03	99.91
AH22_0102	304825	8343300	80	5	0	4	4	98.57	0.56	0.61	0.08		-0.11	100.20
AH22_0103	304873	8343050	37	1	0	1	1	98.39	0.29	0.53	0.10		0.16	100.00
AH22_0104	305035	8342984	37	1	0	1	1	98.98	0.46	0.16	0.06		0.02	100.10
AH22_0105	305551	8342713	43	5	0	2	2	98.67	0.35	0.27	0.06		0.41	100.20
AH22_0106	304609	8342215	44	3	0	3	3	99.51	0.31	0.15	0.06		-0.16	100.30
AH22_0107	304648	8342337	41	5	0	5	5	99.47	0.20	0.12	0.05		-0.05	100.16
AH22_0108	304627	8342475	41	5	0	5	5	99.58	0.22	0.10	0.03		-0.37	99.96
AH22_0109	304339	8342412	47	4	0	4	4	98.51	0.21	0.13	0.04		0.44	99.74
AH22_0110	303963	8342636	50	5	0	5	5	98.43	0.16	0.10	0.04		0.68	99.78
AH22_0111	304807	8343432	39	3	1	3	2	98.75	0.25	0.19	0.06		0.33	100.00
AH22_0112	304594	8343597	46	5	1	5	4	99.17	0.17	0.14	0.05		0.15	99.96
AH22_0113	304203	8343944	70	5	0	4	4	98.43	0.56	0.73	0.10		-0.04	100.20
AH22_0114	304113	8343855	50	5	0	5	5	98.91	0.28	0.16	0.04		0.04	99.82
AH22_0115	304278	8343609	56	5	0	5	5	98.50	0.46	0.28	0.09		0.24	99.94

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HoleID	Easting	Northing	Collar RL	Hole Depth	From	To	Width	SiO2	Fe2O3	TiO2	Al2O3	Zr	LOI	Total
	GDA2020 Zone 55		m					%						
AH22_0116	304509	8343931	44	5	0	5	5	99.08	0.35	0.20	0.10		0.13	99.96
AH22_0117	304345	8344015	60	5	0	5	5	98.56	0.31	0.52	0.12		0.11	99.77
AH22_0118	304470	8342424	41	3.5	0	3.5	3.5	99.15	0.03	0.04	0.09		0.33	99.83
AH22_0119	304341	8342599	52	5	0	5	5	99.12	0.11	0.14	0.09		0.10	99.80
AH22_0120	304058	8343042	39	2	0	2	2	98.88	0.09	0.11	0.01		0.37	99.76
AH22_0121	303961	8343151	45	5	0	5	5	99.36	0.08	0.12	0.01		-0.12	99.71
SI20077	307838	8341379	55	27	1	25	24	99.43	0.07	0.09	0.08	0.01	0.08	99.81
SI20078	307881	8341337	54	24	1	23	22	99.37	0.07	0.11	0.08	0.01	0.03	99.74
SI20079	308007	8341609	39	12	1	11	10	99.24	0.03	0.06	0.08	0.00	0.07	99.53
SI20080	307997	8341396	40	12	1	11	10	99.40	0.08	0.14	0.09	0.01	0.03	99.81
SI20081	307941	8341281	54	21	1	19	18	99.33	0.07	0.10	0.10	0.00	0.05	99.72
SI20082	308131	8341124	44	12	1	8	7	99.10	0.10	0.16	0.14	0.01	0.14	99.73
SI2HA0014	309116	8339858	34	5	1	4	3	98.69	0.06	0.11	0.07	0.00	0.17	99.19
SI2HA0015	309409	8339388	57	5	1	5	4	98.29	0.21	0.34	0.11	0.02	0.10	99.15
SI2HA0016	309660	8339183	38	5	0	5	5	98.66	0.07	0.10	0.08	0.00	0.25	99.21
SI2HA0017	309877	8338934	64	5	1	5	4	98.08	0.26	0.45	0.11	0.04	0.12	99.16
SI2HA0018	310165	8339088	29	3	0	3	3	98.94	0.06	0.15	0.11	0.01	0.10	99.44
SI2HA0019	310448	8338815	30	4	0	4	4	98.80	0.07	0.13	0.07	0.00	0.21	99.34
SI2HA0020	310443	8339232	29	2	0	2	2	99.02	0.09	0.18	0.11	0.00	0.21	99.68
SI2HA0021	310534	8339124	30	3	0	3	3	98.91	0.14	0.27	0.12	0.02	0.21	99.74
SI2HA0022	310600	8339032	28	2	0	2	2	98.65	0.06	0.10	0.10	0.00	0.57	99.55
SI2HA0023	310180	8339368	29	2	0	2	2	98.66	0.07	0.16	0.08	0.01	0.38	99.43
SI2HA0024	310039	8339445	29	2	0	2	2	98.75	0.12	0.31	0.10	0.03	0.37	99.82
SI2HA0025	308363	8341172	34	4	0	2	2	98.14	0.10	0.16	0.15	0.01	0.36	98.99
SI2HA0026	308456	8341097	34	3	0	3	3	98.97	0.07	0.13	0.08	0.01	0.24	99.56

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HoleID	Easting	Northing	Collar RL	Hole Depth	From	To	Width	SiO2	Fe2O3	TiO2	Al2O3	Zr	LOI	Total
	GDA2020 Zone 55		m					%						
SI2HA0027	308569	8341032	34	3	0	3	3	98.85	0.11	0.18	0.10	0.01	0.21	99.53
SI2HA0028	308518	8340974	32	2	0	2	2	98.95	0.07	0.15	0.10	0.01	0.46	99.85
SI2HA0029	308240	8341345	34	3	1	3	2	99.25	0.09	0.19	0.09	0.02	0.18	99.90
SI2HA0030	308289	8341255	33	3	1	3	2	99.18	0.06	0.14	0.07	0.01	0.15	99.67
SI2HA0031	308613	8340835	30	1	0	1	1	99.17	0.06	0.15	0.06	0.01	0.29	99.82
SI2HA0032	308702	8340748	31	2	1	2	1	99.33	0.03	0.08	0.05	0.00	0.12	99.67
SI2HA0033	308770	8340689	31	2	0	2	2	99.14	0.05	0.11	0.08	0.01	0.35	99.81
SI2HA0034	308727	8340556	49	4	1	4	3	99.26	0.12	0.22	0.09	0.01	0.09	99.86
SI2HA0035	308862	8340585	31	2	0	2	2	99.16	0.07	0.16	0.08	0.01	0.26	99.80
SI2HA0036	308933	8340476	30	2	0	2	2	99.02	0.08	0.20	0.08	0.02	0.28	99.74
SI2HA0037	309025	8340361	31	2	1	2	1	99.19	0.10	0.27	0.09	0.02	0.17	99.94
SI2HA0038	309118	8340269	30	1	0	1	1	98.83	0.07	0.19	0.10	0.02	0.39	99.67
SI2HA0039	309210	8340168	30	2	0	2	2	99.02	0.06	0.13	0.08	0.00	0.38	99.75
SI2HA0040	309310	8340054	30	2	0	2	2	98.87	0.05	0.11	0.06	0.00	0.52	99.68
SI2HA0041	309410	8339991	30	2	1	2	1	99.55	0.05	0.12	0.07	0.01	0.19	100.05
SI2HA0042	309574	8339907	31	3	0	3	3	99.16	0.09	0.18	0.07	0.01	0.26	99.83
SI2HA0043	309677	8339818	30	2	1	2	1	99.18	0.05	0.14	0.06	0.01	0.18	99.68
SI2HA0044	309791	8339698	30	2	0	2	2	99.26	0.07	0.15	0.09	0.01	0.20	99.84
SI2HA0045	309916	8339576	30	2	0	2	2	99.50	0.08	0.18	0.09	0.01	0.13	100.05
SI2HA0046	310316	8339300	30	3	0	3	3	98.98	0.14	0.29	0.12	0.02	0.29	99.93
SI2HA0047	311372	8338234	24	2	0	1	1	98.70	0.04	0.08	0.08	0.00	0.89	99.89
SI2HA0048	311280	8338318	24	3	0	2	2	98.93	0.04	0.07	0.09	0.00	0.49	99.70
SI2HA0049	311189	8338390	25	3	1	3	2	98.70	0.15	0.27	0.13	0.02	0.11	99.47
SI2HA0050	311115	8338463	24	2	1	2	1	98.77	0.04	0.10	0.08	0.00	0.50	99.59
SI2HA0051	311032	8338549	25	3	0	3	3	97.64	0.54	1.03	0.16	0.09	0.20	99.83
SI2HA0052	310919	8338679	26	3	1	3	2	99.06	0.23	0.42	0.14	0.02	0.09	100.05
SI2HA0053	310811	8338816	27	2	1	2	1	98.77	0.06	0.11	0.08	0.00	0.05	99.13
SI2HA0054	310719	8338903	27	3	0	3	3	99.00	0.13	0.25	0.11	0.02	0.23	99.82
SI2HA0055	310538	8338585	46	5	1	5	4	99.17	0.13	0.22	0.10	0.02	0.17	99.88

HoleID	Easting	Northing	Collar RL	Hole Depth	From	To	Width	SiO2	Fe2O3	TiO2	Al2O3	Zr	LOI	Total
	GDA2020 Zone 55		m					%						
SI2HA0056	309625	8339574	42	5	1	5	4	99.52	0.06	0.09	0.07		0.05	99.91
SI2HA0057	309721	8339481	43	5	1	5	4	99.09	0.14	0.24	0.11		0.09	99.77
SI2HA0058	309794	8339402	41	5	1	5	4	99.33	0.05	0.08	0.08		0.04	99.64
SI2HA0059	309875	8339335	39	5	1	5	4	99.30	0.09	0.14	0.08		0.03	99.70
SI2HA0060	309955	8339257	36	5	1	5	4	99.50	0.06	0.08	0.08		0.06	99.84
SI2HA0061	310060	8339171	31	4	1	4	3	99.46	0.06	0.11	0.08		0.06	99.84

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JORC Code, 2012 Edition – Table 1 Report

Northern Resource Area PLT Exploration – May 2022

Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.	• Prior to April 2022; Vacuum (VX), and Hand Auger (HA) drilling samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The samples were then sent for analysis, from which up to 250g was pulverised to produce a fused bead for XRF analysis. • After April 2022; Aircore (AC), and Hand Auger (HA) drilling samples were collected in 1m intervals (~2kg) after passing through a single-tiered (50/50) riffle splitter. The samples were then sent for analysis, from which 150g was pulverised to produce a fused bead for XRF analysis. • Duplicate samples were taken every 25m as the alternate 50% split of a single-tiered riffle splitter, apart from holes where the alternate split was sampled for metallurgy. • Correct interval delineation on VX and AC drilling is achieved with metre intervals marked on the drill mast, and samples are collected when the base of the top drive reaches a metre interval. • Correct interval delineation on HA sampling is achieved when the top of the metre extension rod reaches ground level. • The Competent Person considers the quality of the sampling to be fit for the purpose of exploration target generation, as we find subtle geochemical variation not identified at greater sampling intervals. • The Competent Person considers LiDAR to be sufficient for exploration target generation as individual and recent dune events, as well as mineralisation is observed from surface.

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Criteria	JORC Code explanation	Commentary
Drilling techniques	• Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• Three (3) types of drilling have been utilised for exploration, Aircore (AC), Vacuum (VX and Hand Auger (HA). • Hole Depth (EOH) is determined geologically either at the water table or in clayey sands after the base of mineralisation. This is due to the limitations of VX drilling at the water table, and limitations of the compressor on the AC drilling penetrating the clay layers, and also due to observations of proximal miners • AC drilling was by a track mounted drill rig with a 3" blade bit, and a rod length of 3m. • VX drilling was by a tractor mounted drill rig with a 60mm diameter blade bit, and a rod length of 1.8m • Hand Auguring (HA) was conducted using a Dormer Sand Auger with an internal diameter of 2".
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Aircore and Vacuum drilling achieved ~100% sample recovery throughout. • Sample recovery is monitored on the rig for a consistent sample size. • Hand auger sampling excluded contamination on the outside of the auger, from the sub-samples to prevent cross-contamination. • Sample recovery is maximised within a closed system from the drill bit to the riffle splitter. • No relationship between recovery and grade has been observed.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• All drillholes have been logged in their entirety, with qualitative descriptions of moisture content, lithology, grainsize and colour. • Photography is captured at a chip by chip basis using Imago software, colour is extracted from the imagery, and the RGB channels are recorded. • The quality of logging is sufficient for exploration and resource definition.

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Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• Prior to April 2022, sample preparation was completed at ALS in Brisbane, using the PUL-33 and SPL-21 methods, where samples are sorted, weighed wet, and then dried at 105°C. Samples are then split using a rotary sample divider, and volumetrically weighed to a nominal 250g before undergoing the PUL-33 method, where sample are pulverised in a tungsten carbide bowl. • After April 2022, sample preparation is completed at Bureau Veritas in Adelaide using the PR001 method where samples are sorted, weighed wet, and then dried at 105°C, samples are then split using a rotary sample divider, and volumetrically weighed to a nominal 150g before undergoing the PR305 method where samples are pulverised in a tungsten carbide bowl. • These methods are determined to be appropriate by the Competent Person to avoid sample carry-over contamination, in addition Cr is monitored to ensure that pulverisation is performed in a non-ferrous pulverising bowl. • Crushing is not required as the grain size of the sample material is fine grained. • Field duplicates were submitted at a nominal rate of 1 in 50 in line with the quality assurance procedure. • The variability observed between field duplicate assay results is considered appropriate for the style of mineralisation by the Competent Person. • The Competent Person considers the drill sample sizes as appropriate for the grain size of the material, the style of mineralisation and the nature of the drilling program.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	• Prior to April 2022, AC and HA samples had undergone sample preparation and geochemical analysis at Australian Laboratory Services (ALS) in Brisbane,

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Criteria	JORC Code explanation	Commentary
	• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Townsville and Perth. All element results were determined by X-Ray Fluorescence Spectrometry (XRF), method code: XRF26, with H2O/LOI determined by thermogravimetric analysis (TGA) using method code OA-GRA05x. • As of April 2022, AC and HA samples have undergone sample preparation and geochemical analysis by Bureau Veritas in Adelaide and Whyalla. All element results were determined using XRF, method code: XF100 which is considered a total whole rock analysis. • Field duplicates are conducted every 25th sample which is submitted to the lab as blind duplicates, CRM (ELIM22) is utilised at the start of each hole (nominally every 30 samples), and certification of the ELIM22 CRM by OREAS has yet to be finalised. • Bureau Veritas conducts its own internal checks, and these results have been provided to Diatreme and are monitored by both parties as part of the quality control process. • No sample contamination has been detected. • The quality control procedures adopted by Diatreme establish an acceptable level of accuracy and precision.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company Personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• No twinned holes have been performed during this phase of exploration. • Collar and geological logging is captured by and stored within the geological logging/database software MX Deposit. • Photographic data is captured by Imago. • Assay data is recorded in MX Deposit. • No adjustment has been made to assay data.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	• All drill hole locations have been surveyed using a Handheld GPS (Garmin Montana 700i) which provides accuracy for collar surveys of ± 5m.

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Criteria	JORC Code explanation	Commentary
	• Specification of the grid system used. • Quality and adequacy of topographic control.	• The collar data is recorded in the UTM coordinate system: Map Grid of Australia 1994 (MGA94) Zone 55, which uses the Geocentric Datum of Australia 1994 (GDA94) datum on the GRS80 ellipsoid. • All drill holes are vertical, no down-hole surveying is conducted. • LiDAR elevation models (December 2022) were used as the topographic surface.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• First pass drilling spaced nominally at 380m along dune crests, and infill drilling at a nominal 180 - 200m along the trailing arm of an elongate parabolic dune, and in the interdunal valleys. • Auger drilling occasionally is performed at the edge of the dune close to water table. • The data spacing and distribution has not been assessed to establish geological or grade continuity. • No sample compositing has been applied.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The deposit style is an unlithified aeolian sand deposit, comprised of a series of complex parabolic and elongate parabolic dune systems repeatedly reworked and are superimposed upon older dune systems. • The vertical drilling intersects the bedforms at an angle which represents the true width of mineralisation. • No sampling bias is introduced by the orientation of drilling.
Sample security	• The measures taken to ensure sample security.	• Samples were sealed by cable-tie in polywoven bags, and securely stored on-site until transported by TNT courier and their third party to Bureau Veritas in Adelaide. • Reconciliation reports are provided by the laboratory and checked against the sample submission forms.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No external audits or reviews on the data released in this report have yet been conducted. Check assays have been conducted at alternate labs with no significant deviation from the published results.

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Section 2 **Reporting of Exploration Results**

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• The Northern Silica Project, and Casuarina Silica Deposit are located adjacent to the coastline in Far North Queensland, approximately 53km north of Cooktown. The project is adjacent to the south of the Cape Flattery Silica Mines (CFSM) Mining Lease. CFSM has been in operation since 1967 and is Queensland's largest producer of high purity silica and is reported to have the highest production of high purity silica sand of any mine in the world. • The project is located at the northern end of the Cape Flattery/Cape Bedford dune field complex within the Exploration Permits for Minerals (EPM) 17795 & 27212. • Most of the EPM is located on one land title, Lot 35/SP232620, a freehold lot of 110,000 hectares. • The Project and EPM is in the Mareeba Mining District and falls within the Hope Vale Aboriginal Shire Council area. This lies approximately 35km north of the township of Hope Vale, with a population of approximately 1,500 in the Hope Vale Aboriginal Shire Council. • EPM 17795 is owned by Northern Silica Pty Ltd, subsidiary of the Joint Venture Cape Silica Holdings Pty Ltd between Diatreme Resources 90.01% and Sibelco 9.99%. EPM 27212 is owned by Cape Silica Holdings Pty Ltd. Upon completion of a second tranche of investment from Sibelco, Diatreme will hold 73.2%, and Sibelco 26.8% in Cape Silica Holdings. • Diatreme was granted EPM 17795 "Cape Bedford" on 22 June 2016 for a period of 5 years targeting heavy mineral sand and silica sand. The EPM was granted under protected Native Title Protection Conditions. In 2021, a renewal was lodged for an additional 5 years. As of October 2022, the tenure is in good standing. • EPM 17795 is an extensive EPM comprising 147 continuous subblocks (approximately 480km2)

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Criteria	JORC Code explanation	Commentary
		covering the majority of the Cape Flattery-Cape Bedford Quaternary dune field complex. • Three EPM's contiguous with EPM 17795 have been taken up by Diatreme, EPM 27212 (granted 27th September 2021), EPM 27265 (granted 30th January 2020) and application EPM 27430 (granted 26th October 2021). These tenements cover small areas of the dune field not covered by EPM 17795. EPM 27212 is held by Cape Silica Holdings Pty Ltd, EPM 27430, EPM 27265 are held by Northern Silica Pty Ltd. • Cape Silica Holdings and its subsidiaries have two mining lease applications currently undergoing approvals, ML100235, ML100308, and four accompanying mining lease infrastructure applications, ML 100310, ML 100311, ML 100312, ML 100313. Casuarina Silica Pty Ltd, a subsidiary of Diatreme Resources has a mining lease approval underway (ML100309).
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• Exploration for silica sand has been undertaken in the Cape Flattery – Cape Bedford area in 11 Authorities to Prospect (ATP's) or Exploration Permits for Minerals (EPMs) since the 1960's. In general, past exploration of the dune field has primarily focused on the prominent active parabolic dunes of clean white silica sand. Potential for economic concentrations of heavy mineral sand also exists throughout the lower dune elevation and older sand areas. • As there are no assay certificates for this historic data, and the locations of which are dubious, the data it is considered qualitative and is not used for Mineral Resource Estimation, or Exploration Targeting.
Geology	• Deposit type, geological setting and style of mineralisation.	• The Northern Silica Project, and Casuarina Silica Deposit are comprised of unlithified aeolian dune complexes. • The Cape Flattery & Cape Bedford dune fields are aeolian dunes established in the Pleistocene epoch and regularly remobilised during the Pleistocene and Holocene epochs. The dune fields are situated on a coastal plain overlying the Hodgkinson

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		Formation basement with Dalrymple Sandstone forming mesa on basement highs. • Mineralisation is thought to be due to repeated eluviation and illuviation events on immobilised dune systems comprised of an existing quartzose sand source. Deleterious metals are thought to have been eluviated by organic acids, transported vertically down through the dunes and illuviated either by binding to clay rich horizons, or in the water table.
Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• Refer to table in the relevant sections of the announcement.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Data aggregation is a calculation of the mean average on the respective podzolization profiles across mineralised and non-mineralised zones. • A cut-off grade of 98.5% SiO2 is used at Galalar and the Si2 Resource (NSP), and is used here as the sand is of similar source and has undergone similar mineralisation events.
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• All drilling was vertical (-90°) intersecting undulating flat-lying aeolian dune sands. • Downhole length correlates with true width.

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Criteria	JORC Code explanation	Commentary
	• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• Plan view of drill hole collar locations and appropriate sectional views are within the text.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• All mineralised silica sand results are reported. • Where the results in the table are not published, there is either organic style in the first metre, or unmineralized sands / sandy clays below the mineralised horizon.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Fe_2O_3 percentage is the most significant limiting factor on conversion of ore to high purity silica sand product and determines value after SiO_2 percentage. • Fe_2O_3 when found in association with TiO_2, does not act as a contaminant or barrier to refining high-purity silica sand, with testing showing gravity separation to accurately remove this impurity. • Mineralisation is unlithified quartzose sand.
Further work	• The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Infill drilling to a semi-gridded pattern (nominal <150m) across the Si2 prospect to upgrade the Si2 prospect. • Lateral extensional drilling to Si2 toward the South East. • First pass drilling program at Casuarina • Metallurgical test work is completed, with assaying soon to be completed. • Figures in the body of the text indicate the upcoming work and extensions.