ASX ANNOUNCEMENT

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Bulk testing results demonstrate Galalar Silica Project capable of producing premium-grade product

- **Bulk testing results for Galalar Silica Project demonstrate North Qld project capable of producing premium-grade silica < 100ppm Fe_2O_3 (low iron) product using standard processing techniques**
- **Excellent recovery rates to final product of approximately 79%, with potential for secondary high-value heavy mineral sands tailings streams**
- **Testing confirms final product suitable for high-tech applications including in the manufacture of photovoltaic (solar) panels, ultra-clear glass and other products, attracting premium prices.**

In a major boost for its Galalar Silica Project, Diatreme Resources Limited (ASX:DRX) announced today results from specialist bulk sample testing that demonstrate the project's ability to produce a premium-grade product suitable for high-tech applications, potentially capable of attracting premium prices.

The results were obtained from a specialist industry recognized silica testing facility in China, which analysed a bulk raw sand sample of 350kg provided from the North Queensland project.

This follows Diatreme's earlier announcement of a maiden Inferred Mineral Resource for the project's Nob Point Prospect, comprising an estimated **21.6 million tonnes at > 99% purity silica** (refer ASX announcement 13 August 2018) and previous bulk sample process testwork results confirming the project is capable of producing high-quality silica sand at **99.9% SiO2** (refer ASX announcement 16 August 2018).

Welcoming the latest results, Diatreme's CEO, Neil McIntyre said: "These results reconfirm that the project is capable of producing a premium-grade, low Fe and high purity silica sand product, meeting the requirements for high-end glass manufacturing and capable of attracting premium prices.

"The latest data will be incorporated into the resource definition and mine development planning process currently being undertaken by independent consultants Ausrocks Pty Ltd, with Diatreme targeting an increased Mineral Resource estimate for Galalar during the current quarter."

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Notably, the testing showed the project is capable of meeting the exacting specifications of high-end manufacturers/processors, including grain size being within a 30-120 mesh size range (125-600 micron) and iron (Fe_2O_3) content below 100ppm (parts per million).

This low iron level is in high demand by manufacturers with limited available producers of significant volumes and gives the end product glass the high levels of transparency required for production of high efficiency photovoltaic panels, ultra-clear glass, electrical and electronic grade silicon micro powder and other products.

Excellent recovery rates were obtained for the final product of approximately 79% from raw sand feed. The test results also showed the potential to obtain secondary, high-value heavy mineral sands (HMS) by product streams during mining, adding to the project's value.

The Galalar project is also located in close proximity to fast-growing Asian markets, with the global silica sand market seen reaching nearly US$10 billion in annual revenues by 2022, with a compound annual average growth rate of 7.2% (source: IMARC Group).

Bulk sampling results

Testing was undertaken in December 2018 by Bengbu Design & Research Institute for Glass Industry Co., Ltd in Bengbu City, Anhui Province, China (Chinese State owned Glass Lab). The sample sent to the lab consisted of a 350kg of untreated raw drilling samples extracted from 19 drill holes across the project area.

Key summary findings (***excerpt*** from lab report) include:

- *After crude sand goes through beneficiation process of "scrubbing, classification and gravity separation (three times through spirals) and medium-intensity magnetic separation"…concentrate [was obtained] with Fe_2O_3 content in the range of 100~80ppm, indexes of which are as follows:*
  - *product yield (recovery) from sample: 78.82-79.40%;*
  - *chemical composition: SiO_2 : 99.66-99.77%, Al_2O_3 : 0.040-0.058%, Fe_2O_3 : 0.0086-0.0088%, TiO_2 : 0.013-0.015%;*
  - *particle size: > 0.71mm=0%, 0.71-0.125mm=99.13%, < 0.125mm=0.87%.*

The above silica concentrate would be expected to be widely used in photovoltaic rolled glass, ultra-clear glass, high-end containers, electrical and electronic grade silicon micro powder, etc.

Tailings produced in the course of the experiment include[d] graded fine sand, gravity separated tailing and magnetic separated tailing.

In order to realize comprehensive utilization of resources and increase added value of the products, gravity separated tailing can be further enriched to recover Ti, Zr and other minerals; magnetic separated tailing can also be collected to recover Fe and Ti minerals; graded fine sand can be expected to be used to prepare glass fibre sand, reducing both environmental impacts and processing costs.

The process flow adopted in the experiment is reliable and can be used as a reference for the design of plant construction and industrial production."

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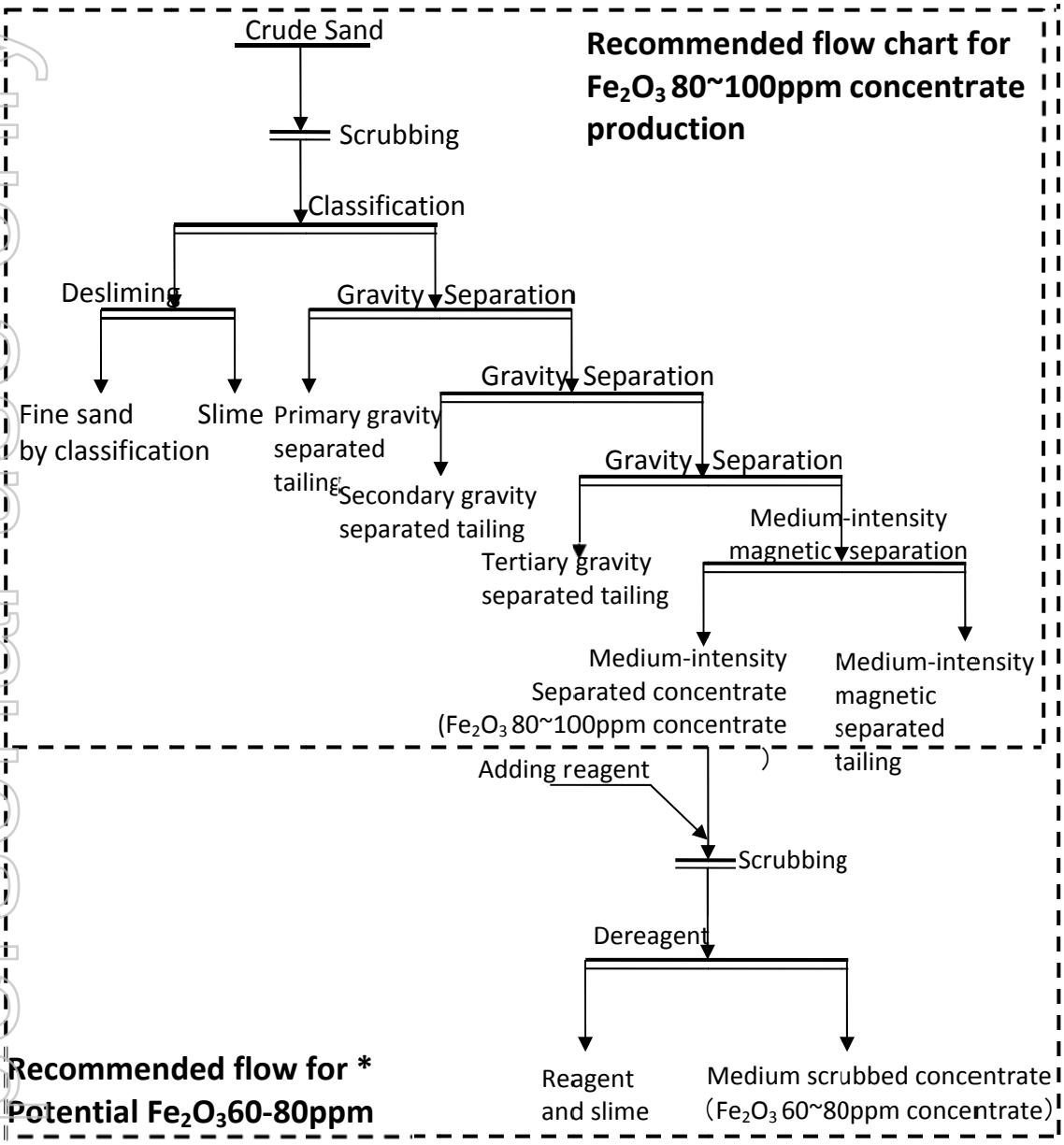

Fig 1 – Production Flow Sheet

Note * - Production of a lower 60-80ppm Fe_2O_3 product requires the further addition of an active re-agent.

Product Specifications

Products Chemical Component（%）

Product	SiO_2	Al_2O_3	Fe_2O_3	TiO_2	K_2O	Na_2O	CaO	MgO	L.O.I
Fe_2O_3=80~100ppm	99.71	0.052	0.0086	0.013	0.0042	0.0041	0.0063	0.0020	0.14
Fe_2O_3=60~80ppm	99.76	0.031	0.0072	0.015	0.0053	0.0038	0.0011	0.0060	0.13

The Analysis of Products Particle Size（%）

Size（mesh）	Fe_2O_3=80~100ppm Product			Fe_2O_3=60~80ppm Product		
	Weight（g）	Distribution（%）	Accumulated Distribution（%）	Weight（g）	Distribution（%）	Accumulated Distribution（%）
＞30	1.1	0.80	0.80	1.4	0.89	0.89
30~36	5.2	3.77	4.57	6.5	4.14	5.04
36~60	35.1	25.45	30.02	39.7	25.30	30.34
60~80	73.7	53.44	83.47	84.2	53.66	84.00
80~100	19.3	14.00	97.46	20.9	13.32	97.32
100~120	2.3	1.67	99.13	3.0	1.91	99.24
＜120	1.2	0.87	100.00	1.2	0.76	100.00
Σ	137.9	100.00	—	156.9	100.00	—

Fig 2 – Product specification sheet – From bulk testing results.

Next steps

Diatreme is engaging with various regulatory and permitting agencies to design and scope the level of studies required and the permitting process, with the aim of generating a realistic project implementation timeline moving forward.

This is being undertaken concurrently with further resource definition work and engagement with potential silica product offtakers to design suitable product specifications, pricing and delivery methodology.

Meanwhile, results from recent drilling during the latter part of 2018 (refer ASX announcement 5 December 2018) are expected later in January 2019. The drilling program was undertaken with Diatreme's drill rig and crew, comprising 30 aircore drilled holes for some 700m of total drilling, with the aim of increasing confidence in the resource.

An extensive sampling program was undertaken at 1m drilling intervals, resulting in some 700 samples being obtained for further specialist testing.

Diatreme expects mining to be a relatively simple operation due to the small amount of overburden. An initial operation with annual production of approximately 300,000-500,000 tonnes of high-grade silica product is envisaged, subject to further commercial studies, discussions with potential customers and regulatory approvals.

Mr McIntyre added: "Having recently renamed the project 'Galalar' with the support of the traditional owners, Hopevale Congress, we are confident of further progress in 2019 as we advance this potentially valuable project towards development, generating new jobs for the local community and wealth for all stakeholders.

"In addition, our flagship Cyclone Zircon Project continues to build momentum after last year's positive definitive feasibility study (DFS), with Diatreme seeking to advance discussions with potential project partners amid an environment of constrained supply and rising prices."

Neil McIntyre
Chief Executive Officer

Greg Starr
Chairman

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About Cape Bedford

The Cape Bedford EPM17795 is located approximately 200km north of Cairns in North Queensland, and covers the extent of a large Quaternary sand dune field, part of which is currently being mined by Cape Flattery Silica Mines Pty Ltd (CFSM), a wholly owned subsidiary of Mitsubishi Corporation. Cape Flattery has operated since 1967 and is the world's largest silica sand mining operation.

The Cape Bedford/Cape Flattery region of north Queensland is dominated by an extensive Quaternary sand mass and dune field that stretches inland from the present coast for approximately 10km and extends 50km from north to south.

Historical exploration has focused on the Cape Flattery area, within the Mining Leases of CFSM, but reconnaissance exploration has been carried out over the entire dune field in the late 1960's and again in the early 1980's. This exploration confirmed the presence of both silica sand and heavy mineral sands, and Diatreme intends to build on the existing data and initially target those areas (e.g. Nob Point) where prospective silica sand dunes have been identified and access is readily available.

Following the signing in 2017 of a Conduct and Compensation Agreement and a Cultural Heritage Agreement with the traditional owners, Hopevale Congress, Diatreme has worked closely with Hopevale Congress to maximise the economic benefits for the local community.

In August 2018, Diatreme defined a maiden Inferred Mineral Resource for the project's Nob Point Silica Sand Prospect (now Galalar Silica Project) located in the southern area of the tenement (refer ASX announcement released 13 August 2018).