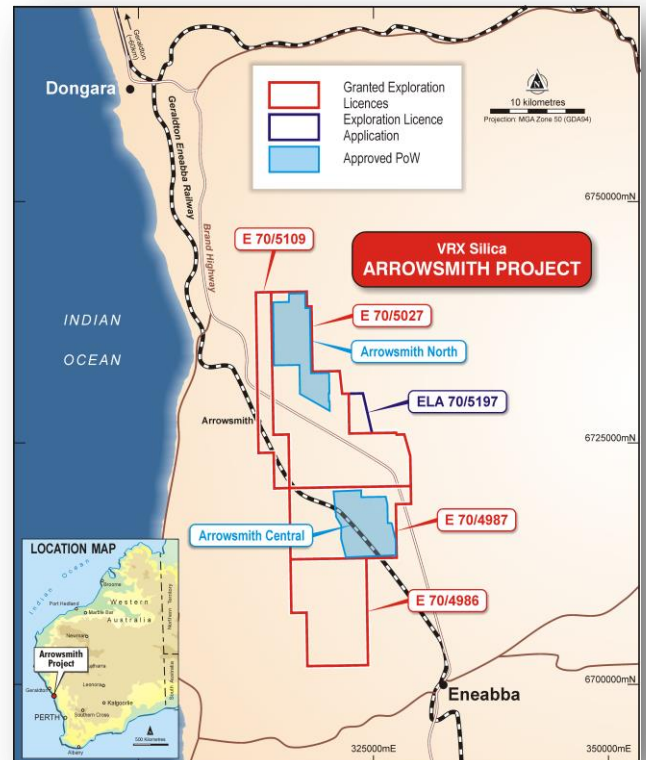
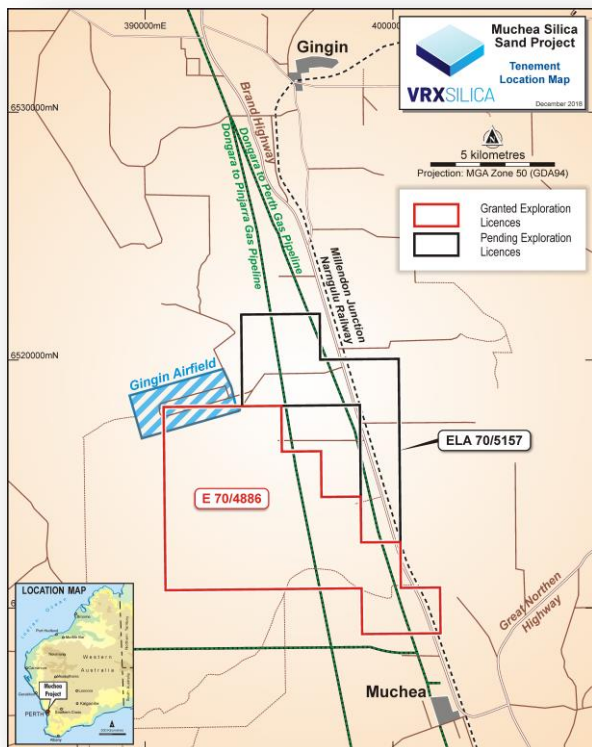


The following is a summary of the activities of VRX Silica Ltd (**VRX Silica** or **Company**) (ASX: VRX) during the quarter ending 31 December 2018.

VRX Silica has two silica sand projects at Arrowsmith and Muchea, 270km and 50km north of Perth, respectively, which contain a combined total Mineral Resource of silica sand of 412 million tonnes. See locations below:

Exploration



Figures 1 and 2: **Muchea (Left) and Arrowsmith (Right) Silica Sand Projects**

Bulk Sampling Testwork

VRX Silica has completed bulk sampling at both projects – air core drilling and hand auger at Muchea, and hand auger at Arrowsmith – as announced to ASX on 30 July 2018 “*Muchea Acquisition and Capital Raising*” and 30 August 2018 “*Arrowsmith Silica Sand Project*”.

The drill samples were used to generate four bulk composites for metallurgical testwork for Muchea (air core drilling only sampling), Arrowsmith North, Arrowsmith Central and Arrowsmith South (hand auger sampling).

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The composite was sent to the CDE Global (**CDE**) facility in Cookstown, Ireland, a specialist sand metallurgical testing laboratory with the intention of gaining a better understanding of the sand characteristics when subjected to standard processing techniques.

The CDE testwork highlighted the potential for further improvements by utilising specialist processing equipment in the attritioning and magnetic separation steps. The attrition test uses a high-speed shaft with paddles at a high slurry density of 75% solids to liberate fine particles.

The magnetic separation step involved pumping a slurry through a magnetised matrix “Hi Intensity Magnetic Filter”, which separates the feed into three distinct fractions: magnetics, middlings and non-magnetics, dependant on the magnetic susceptibility of the individual sand grains.

Table 2 below shows the results of the magnetic separation tests for the 4 project areas. The results demonstrate that a HI Filter can very effectively separate out the pure quartz grains from those which contain deleterious elements.

Table 1: Magnetic Separation Testwork Results

PROCESS STAGE	SAMPLE DESCRIPTION	Mass	Al ₂ O ₃	CaO	Cr ₂ O ₃	Fe ₂ O ₃	K ₂ O	MgO	MnO	Na ₂ O	TiO ₂	LOI _{1000C}	SiO ₂ + LOI
		%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	
Mucea Magnetic Separation	Magnetics	0.41%	1,245	175	14	2,521	196	128	57	117	3,756	0.21	99.18
	Middlings	7.31%	335	50	2	90	51	14	1	30	207	0.05	99.92
	Non magnetic	92.27%	262	49	2	68	38	12	1	21	179	0.10	99.94
Arrowsmith North Magnetic Separation	Magnetics	0.63%	5,069	403	75	15,456	904	518	433	126	22,668	0.39	95.43
	Mids	9.33%	1,762	48	3	453	238	22	2	36	255	0.10	99.72
	Non magnetic	90.04%	1,797	46	3	414	276	20	2	33	198	0.09	99.72
Arrowsmith Central Magnetic Separation	Magnetics	0.71%	16,006	424	419	44,243	1,379	471	834	141	36,954	1.08	89.91
	Middlings	11.24%	2,863	71	5	749	827	31	7	74	676	0.18	99.47
	Non magnetic	88.06%	2,566	68	3	341	785	22	2	69	267	0.13	99.59
Arrowsmith South Magnetic Separation	Magnetics	0.70%	15,696	1,873	254	43,891	4,046	1,553	1,301	405	54,561	0.74	87.64
	Mids	8.26%	6,104	135	5	624	2,972	45	5	225	476	0.22	98.94
	Non magnetic	91.04%	7,311	149	4	470	3,847	32	2	289	193	0.15	98.77

The ASX announcement on 20 September contained detailed images of the CDE flowsheet, the composite drill hole locations for both Arrowsmith and Mucea, tables showing grades and bulk testwork results, comparison charts of raw material vs attritioned and washed samples as well as the CDE lab scale attrition cell. The detail provided was extensive and complete and further detailed information is within the 20 September 2018 ASX announcement.

The results of the CDE testwork have confirmed that the Mucea, Arrowsmith North and Arrowsmith Central projects can produce a sought-after product for glassmaking. This enabled a JORC compliant Mineral Resource to be estimated for these projects and CSA were engaged to conduct an independent Resource Estimate on the Arrowsmith North Mineral and Arrowsmith Central deposits which was completed during the quarter.

Having established the Arrowsmith Silica Sand Project Resource Estimate early in the quarter, VRX Silica continued working towards the Mineral Resource Estimate at the Company’s Mucea Project which was also completed during the December quarter.

A further iteration of testwork was commenced by CDE using a refined flow sheet to incorporate additional attritioning to further improve the quality of the potential final products for Muchea, Arrowsmith North and Arrowsmith Central. The results of this work will be followed by a process circuit design and engineering which will allow for capital cost estimates to be generated.

Maiden Mineral Resource Estimate for Arrowsmith North

VRX Silica engaged CSA Global (**CSA**) to prepare a maiden Mineral Resource estimate (**MRE**) for the Arrowsmith North target area reportable under the guidelines of the JORC Code and on 2 October 2018 the Company announced the Arrowsmith North MRE comprises 193.6 Mt @ 98% SiO₂ reported in accordance with the JORC Code 2012¹ Edition. The MRE exceeds the previous Exploration Target of 100 to 140 million tonnes at 95% to 98% SiO₂.

The MRE is based on the results obtained from 62 hand auger drill holes to a depth of 4-5 metres for 235.6 m and defines two silica sand types, white and yellow sand, geologically logged and differentiated based on colour and through chemical analysis results. Based on metallurgical testwork completed to-date, both sand types are readily amenable to upgrading by conventional washing and screening methods to produce a high-purity silica sand product with high mass recoveries. The high-purity silica sand product specifications are expected to be suitable for industries such as glass making. The MRE results are shown in Table 2.

Table 2: Arrowsmith North Mineral Resource

Classification	Domain	Million Tonnes	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	LOI%	TiO ₂ %
Inferred	Yellow Sand	149.4	97.7	1.1	0.4	0.5	0.2
	White Sand	44.2	99.1	0.3	0.1	0.2	0.2
	All Sand	193.6	98.0	0.9	0.3	0.4	0.2

**Note: Interpreted mineralisation is domained into different sand types based on drill logging data and publicly available soil mapping information, above a basal surface wireframe defined based on the current drill sampling depths. Depletion zones include the upper 0.5 m for rehabilitation purposes, and minor swamp zones in the east and south of the modelled area. Differences may occur due to rounding.*

The Mineral Resource is classified as Inferred according to the principles contained in the JORC Code. Material that has been classified as Inferred was considered by the Competent Person to be sufficiently informed by geological and sampling data to imply but not verify geological and grade continuity between data points.

The project area is a substantial prominent dune system that has only been tested with shallow auger. The Company has an approved Program of Works (**PoW**) to infill the Arrowsmith North Inferred Mineral Resource and add to it substantially and with the intention of upgrading the resource to an Indicated category. The Company has also completed an Aboriginal Heritage clearance survey over the PoW area. This drilling will be done by an Aircore drill rig which will not have the depth limitations of the hand auger technique and the full depth of sand will be drill tested.

¹ Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

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The drilling program will consist of 105 holes with an average depth of 11.3m (in comparison, the average depth of hand auger holes was 3.8m) and is expected to commence in the March quarter 2019. Upon completion of this work the Mineral Resource estimate at the Company's Arrowsmith Central prospect will be updated.

The initial exploration program also provided a bulk sample which was used for the second iteration of metallurgical testwork and has verified that the sand can be beneficiated to glass making quality (VRX announcement 20 September 2018). An additional third iteration of testwork, which is underway, is expected to improve on the currently known quality.

The Company has had a number of enquiries from potential customers in Asia and now that this Mineral Resource estimate has been established VRX Silica can accelerate the Company's marketing program for potential sales in Asia.

Maiden Mineral Resource Estimate for Arrowsmith Central

On 13 December 2018 VRX Silica Limited announced the results from the CSA independent estimate of the Mineral Resource at its Arrowsmith Central prospect. The result is based on an exploration program of 39 hand-held auger drill holes and is an acceptable standard for use in a Mineral Resource estimate publicly reported in accordance with the JORC Code.

The Resource area is a small portion of the tenement area, adequate for initial mining studies which can be increased substantially with future aircore drilling over an increased area. Additional drilling is planned for early 2019 with the Company having recently completed an extensive Aboriginal Heritage survey with representatives of the Southern Yamatji claimant group for a more intensive and wider ranging drill program.

Table 3: Arrowsmith Central Mineral Resource

Classification	Million Tonnes	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	K ₂ O%	LOI%	TiO ₂ %
Inferred	28	97.7	1.2	0.3	0.3	0.5	0.2

**Note: Interpreted silica sand layer is domained above a basal surface wireframe defined based on the current drill sampling depths. A depletion zone consisting of the upper 0.5 m is reserved for rehabilitation purposes, is not estimated or reported. Differences may occur due to rounding.*

The Arrowsmith Central Project is immediately adjacent to the Eneabba – Geraldton rail line, which offers a unique low capex logistics solution to export bulk products out of Geraldton.

This resource adds to the two previously announced silica sand resources, Arrowsmith North, "Arrowsmith North Maiden Mineral Resource" 2 October 2018, and Muchea, "Muchea Silica Sand Project Maiden Resource" 20 November 2018.

Maiden Mineral Resource Estimate for Muchea

On 20 November 2018 VRX Silica announced the results from the independent estimate of the Mineral Resource at its Muchea Silica Sand Project (**Muchea Project**), which is located 50km north of Perth.

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The Mineral Resource estimate (**MRE**) for the Muchea Project comprises a combined total of Indicated and Inferred Mineral Resources of 191 Mt @ 99.6% SiO₂ reported in accordance with the JORC Code 2012 Edition. The Indicated component of the MRE comprises 19 Mt @ 99.7% SiO₂, with the Inferred component being 172 Mt @ 99.6% SiO₂.

The MRE was carried out by CSA and based on 44 hand auger drill holes for 260.7 m and 46 aircore holes for 522 m carried out by VRX in July 2018.

The MRE results are shown in Table 4.

Table 4: Muchea White Silica Sand Mineral Resource Estimate as at November 2018

Classification	Million Tonnes	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	LOI%	TiO ₂ %
Indicated	19	99.7	0.03	0.03	0.2	0.08
Inferred	172	99.6	0.04	0.02	0.2	0.08
Indicated + Inferred	191	99.6	0.04	0.02	0.2	0.08

**Note: Interpreted white silica sand mineralisation is domained above a basal surface wireframe defined based on drill logging data. The upper (overburden) layer within 0.5 m of surface is depleted from the modelled silica sand unit, being reserved for rehabilitation purposes. All classified silica sand blocks in the model are reported. Differences may occur due to rounding.*

The large Maiden MRE of high-grade silica sand vindicates the Company's decision to acquire the Muchea Project which the Company believes is a world class high-grade deposit, which can be processed to supply almost any grade sand for glassmaking in Asia.

The area of the Inferred Mineral Resource estimate is predominately based on shallow hand auger results and has the potential to be deeper with a significantly larger Mineral Resource. The MRE defines the upper white silica sand layer, geologically logged and differentiated based on colour and chemical analysis results.

The Company believes that the Indicated Mineral Resource area is adequate for detailed mining studies, and closer spaced drilling will also extend the area and tonnage for a potential Ore Reserve.

A composite of the samples gained during the due diligence work was sent to the CDE facility in Cookstown, Ireland. The Bulk testwork returned the following results, Table 5 below, after de-sliming, attritioning, spirals and magnetic separation. The final product grade and particle sizes as reported are considered to be of glass making quality.

Table 5: CDE Global Bulk Testwork results

SAMPLE MATERIAL	SAMPLE DESCRIPTION	Al ₂ O ₃	Fe ₂ O ₃	K ₂ O	TiO ₂	LOI _{1000C}	SiO ₂	SiO ₂ +
		ppm	ppm	ppm	ppm	%	Calc.	LOI
MUCHEA	Raw Material	562	175	54	414	0.23	99.64	99.87
	Final Product	262	68	38	179	0.1	99.84	99.94

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A further iteration of testwork has been commenced by CDE using a refined flow sheet to incorporate additional attritioning to further improve the quality of the potential final products to produce a high-quality feedstock for ultra-clear glass production.

Upon receipt of this work VRX Silica will move quickly into detailed process circuit design, engineering and mining studies to support mining proposals and capital cost estimates as well as for forwarding to relevant Government agencies to commence the approvals process.

Maiden Mineral Resource Estimate Totals

Table 8: Total Silica Sand Mineral Resource, Arrowsmith North, Arrowsmith Central and Muchea

Prospect	Indicated		Inferred		Total	
	Tonnes (millions tonnes)	Grade (% SiO ₂)	Tonnes (millions tonnes)	Grade (% SiO ₂)	Tonnes (millions tonnes)	Grade (% SiO ₂)
Arrowsmith North			193.6	98.0%	193.6	98.0%
Arrowsmith Central			28	97.7%	28	97.7%
Muchea	19	99.7%	172	99.6%	191	99.6%
Total	19	99.7%	393.6	98.7%	412.6	98.7%

Arrowsmith North Mining Lease Application

On 24 December 2018 VRX Silica Limited announced the lodgement of its first silica sand Mining Lease Application, MLA70/1389 at its Arrowsmith North prospect.

The MLA Resource at 73mt @ 97.7% SiO₂ is only a small portion of the total Resource of 193.6 Mt @ 98% SiO₂ but is expected to increase with deeper drilling than the hand-auger sampling previously undertaken to estimate the Resource.

This Resource is contained within the previously announced silica sand Resource at the Company's Arrowsmith North prospect, "Arrowsmith North Maiden Mineral Resource" of 2 October 2018.

This is the first of three Mining Lease applications that the Company will lodge in the short term and this Mining Licence application will enable the Company to apply for a Mining Permit at Arrowsmith North early in the 2019 year.

The Company recently announced that it has received interest from potential offtake partners for silica sand in quantities and grades that can be supplied from the Arrowsmith Silica Sand Project, "Three LOIs for Silica Sand Offtake" of 11 December 2018.

The Arrowsmith North Mining Lease Application MLA70/1389 has an area of 1,728Ha, see Table 6 below, and covers part of the Exploration Licences E70/5027 and E70/5109, Figure 1, which were granted on 14/06/2018 and 14/08/2018 respectively.

Table 6: Arrowsmith North tenement details

Tenement	Holders	Application date	Area (km ²)
MLA70/1389	Ventnor Mining Pty Ltd	21/12/2018	17.3

CSA has reported the Mineral Resource which is located within the MLA boundary and is summarised in Table 7, below.

Table 7: Arrowsmith North Silica Sand Mineral Resource estimate within MLA

Classification	Million Tonnes	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	LOI%	TiO ₂ %
Inferred	73.2	97.7	1.1	0.4	0.5	0.2
* Note: Mineral Resources are reported only from within the VRX nominated MLA and form a subset of the total Arrowsmith North Mineral Resources as reported to the ASX on 2 October 2018. Differences may occur due to rounding.						

A Programme of Works for aircore drilling has been approved by DMIRS and the Aboriginal Heritage Survey was completed during the quarter. This drilling, which will improve the JORC classification, deepen and extend the current Mineral Resource, is expected to be completed in the March Quarter 2019.

Silica Sand Geology - Arrowsmith North

Most economically significant silica sand deposits in Western Australia are found in the coastal regions of the Perth Basin, and the targeted silica sand deposits are the aeolian sand dunes that overlie the Pleistocene limestones and paleo-coastline, which also host the regional heavy mineral deposits. Within the project area, data obtained from the Department of Agriculture soil mapping shows there are pale and yellow deep sands predominating with lesser swampy areas and occasional ironstone ridges. See Figure 3 and 4 below:

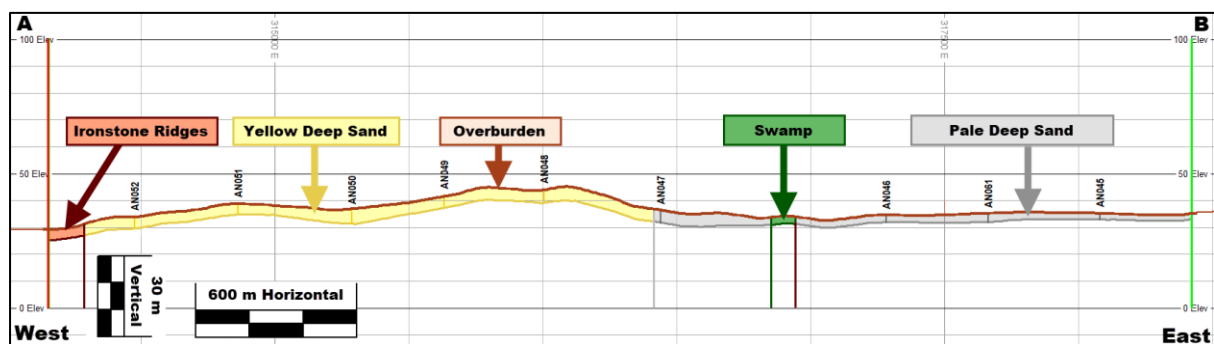


Figure 3: Cross section A – B at 6738150 mN (See Figure 4), Looking north; 10 times Vertical exaggeration

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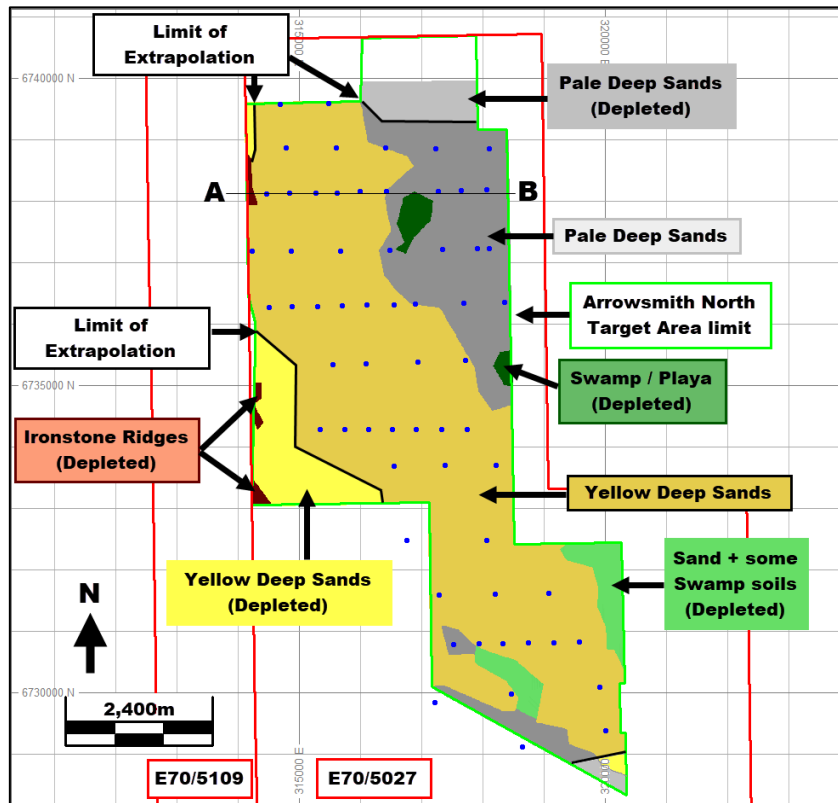


Figure 4: Simplified geology of the Arrowsmith North Area. Section line A – B shown.
 Tenements as in Figure 2
 Source: Outlines based on DOAG soil mapping data, refined based on drill data.

Silica Sand Geology - Muchea

Whereas most economically significant silica sand deposits in Western Australia are found in the coastal regions of the Perth Basin, the targeted silica sand deposits at Muchea are hosted by the Bassendean Sand, which extends over large areas of the Swan coastal plains of the Perth Basin.

The term Bassendean Sand was introduced by Playford and Low (1972) for the widespread unit of quartz sand extending over large areas of the coastal plain, from about 23 km north of Jurien, to about 15 km southwest of Busselton (Figure 5). The Bassendean sand is thought to have a maximum thickness of about 45 m, and the unit is found as a strip parallel to the coast, having a width of about 10–20 km, and with its western edge about 5–10 km inland.

Quartz grains of the Bassendean Sand are interpreted as being derived from granitic rocks in the Darling Range and have accumulated as shoreline and dune sands during two or more periods of relatively stable sea level, ranging from about 8 to 25 m above present sea level (Abeyasinghe, 2003).

According to Abeyasinghe (2003), the Bassendean Sand is typically clean, well rounded and well sorted; however, its physical, chemical, and mineralogical characteristics can vary considerably resulting in variation in the quality of the sand regionally as well as locally. The

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sand is generally white near surface (Figure 6) but at depth it is usually high in iron and yellow to brown in colour.

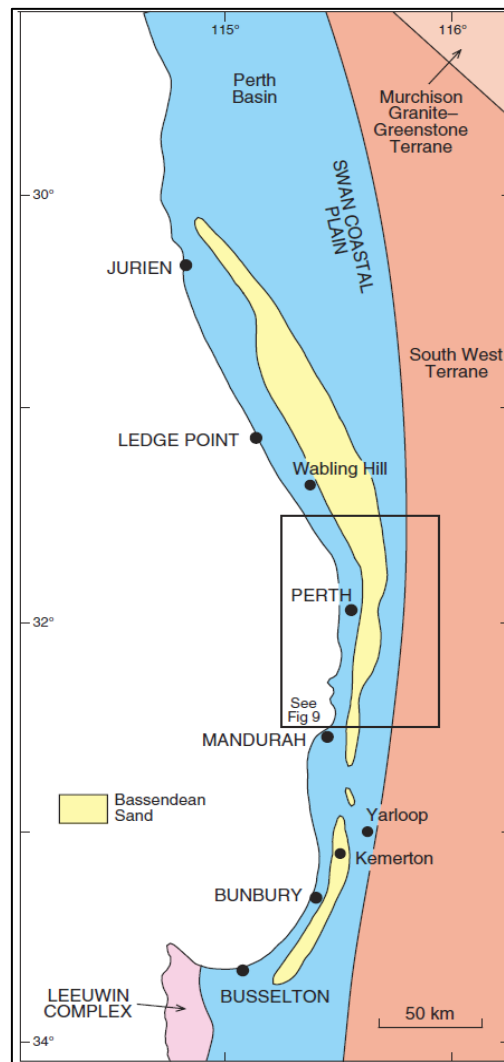


Figure 5: Regional distribution of Bassendean Sand on the Swan Coastal Plain

The Bassendean Sand generally has little or no overburden and it is noted that a discontinuous layer (generally less than a metre thick) of relatively hard ferruginous material, known as 'coffee rock', at a depth ranging from less than a metre to about 15m below the surface. Abeyasinghe (2003) interpreted the coffee rock as having formed due to precipitation of Fe oxides and hydroxides from circulating iron-rich groundwater. Below this layer, the white sand can be quite thick, extending to a maximum of about 15m.

Soil mapping reported by Purdie et al. (2004, page 57; refer to Figure 3) described the Bassendean Zone as comprising "fixed dunes inland from coastal dune zone". The Pinjarra Zone to the east was described as "alluvial deposits.....between the Bassendean Dunes Zone and the Darling Scarp". By comparison with the map presented by Abeyasinghe (2003,



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page 43. Map from Low, et al. 1978 and 1980) the Bassendean Zone is underlain by the Bassendean Sand, while the Pinjarra Zone at Muchea is underlain by clays of the Guildford Formation.



Figure 6: Dunes underlain by silica sand of the Bassendean Sand at surface, view looking east

Future Work

The Company intends to drill additional infill holes at each of the Resource areas to increase confidence, increase the Resources and supply additional samples for future bulk testwork.

The drill program is expected to commence in the March quarter 2019.

The Company will continue to pursue marketing opportunities and follow up on enquiries to date.

Corporate

Appointment of International Sales Manager

On 27 November 2018 VRX Silica announced the appointment of Mr Yoonil Kim to the position of International Sales Manager.

Mr Kim was born in South Korea where he completed his education, including degrees in environmental management systems and international trade. He has had fifteen years'

experience marketing Silica Sand to glass manufacturers and foundries in Korea, Japan, Taiwan, Thailand, Philippines, Malaysia, Cambodia and China.

He has a demonstrated capacity to engage glass manufacturers, paint manufacturers and foundry clients in South East Asia and will be based in Kuala Lumpur, Malaysia, from where he can easily service the Asian markets.

Ventnor views the appointment of Mr Kim as an important step in the Company's plans to become an exporter of high-quality Silica Sand to the Asia/Pacific region.

Change of Company Name

Shareholders at the Company's AGM on 30 November 2018 voted unanimously to change the Company name to **VRX Silica Ltd** and on 6 December 2018 Ventnor Resources Ltd advised the market that as of that date **VRX Silica Ltd** will be the name of the Company; however the ASX ticker code will remain as VRX.

The new Company name of **VRX Silica Ltd** removes any ambiguity as to the commodity in which the Company is specialising and better reflects the Company's objective of becoming a large scale supplier of silica sand to the global market, and will be easily identified by international customers and potential clients.

Option over Biranup Project and Farm-In JV

VRX Silica announced on 15 November that the Company had entered into an option agreement with Metalicity Limited (ASX:MCT) (**MCT**) for MCT to acquire a 40% interest in the Company's Biranup Project (**Project**) and a farm-in and joint venture arrangement for the balance of the Project. Biranup Project details are in the Company's 2018 Annual Report.

The key terms of the option agreement are as follows:

- MCT to pay the Company a \$20,000 option fee to secure an exclusive 3-month option period.
- If the option is exercised, the purchase price for a 40% interest in the Project is \$500,000, payable in cash and/or MCT shares at MCT's discretion.
- Following exercise the parties will enter into a farm-in arrangement, whereby MCT may earn a further 20% by spending \$1 million and a further 20% by spending an additional \$1 million (to an aggregate 80% interest), following which the parties will form a joint venture to fund the Project on a pro-rata basis or the Company's interest to dilute to a net smelter royalty.

Three LOIs for Silica Sand Offtake

On 11 December 2018 VRX Silica Ltd announced that it has received three non-binding Letters of Intent (**LOIs**) for the offtake of an aggregate 590,000 tonnes of silica sand per annum from the Company.

The LOIs have been received from a diverse range of silica sand distributors in the Asia-Pacific region – the Company's primary target market for the supply of silica sand – to supply silica sand to different countries for a range of industries.

VRX Silica noted at the time that the receipt of these three LOIs supported the Company's research that there is significant demand for silica sand products of the type capable of

production from the Company's Arrowsmith and Muchea silica sand projects. This is a solid foundation for the Company's initial aim of establishing demand for more than 1 million tonnes per annum from each individual project area.

Details of the distributors and the LOIs generally are set out below:

Si Resources Corporation – Philippines: Si Resources Corporation (**SRC**) is a wholly owned subsidiary of Rock Energy International Corporation; during the last two decades it has been one of the leading distributors of imported silica sand within the Philippines.

SRC is located in Manila South Harbour, Philippines, and supplies the Philippine glass bottle manufacturing industry with 110,000 tonnes of silica sand annually as well as supplying other industrial users of silica sand, creating a total annual demand of 290,000 tonnes.

SRC's LOI covers the supply of this tonnage annually from the Company with pricing dependent on final specification. The specification* sought by SRC can be met from the Arrowsmith Silica Sand Project production.

Shanghai GEEYEAH International Trading Co., Ltd – China: Shanghai GEEYEAH International Trading Co., Ltd (**SGI**) is located in Pudong New District, Shanghai, China and is a leading supplier of silica sand for more than 15 years to the fibreglass market and more recently to the solar panel cover glass market.

SGI's LOI covers the supply of 200,000 tonnes per annum, subject to final price and specification, for a period of five years. The specification* sought by SGI can be met from the Muchea Silica Sands Project production.

Dong A Heung-Eop Mining Co., Ltd – Republic of Korea: Dong A Heung-Eop Mining Co., Ltd (**DAHEM**) of Busan, Republic of Korea, has been one of the leading suppliers of casting sand to the Korean foundry industry for more than 50 years.

DAHEM's LOI covers the supply of 100,000 tonnes of high purity silica sand per annum with pricing dependent on final specification. The specification* sought can be met from the Arrowsmith Silica Sand Project production.

Capacity for Supply

The Company is confident from exploration and testwork conducted to-date that it can readily meet the specifications* and tonnage sought under the LOIs from the Company's two silica sand projects in Western Australia - Muchea and Arrowsmith.

Events Subsequent

On 17 January 2019 VRX Silica Limited announced the lodgement of its second silica sand Mining Lease Application, MLA70/1390 at its Muchea Silica Sand Project which is located 50km north of Perth.

The mining lease application includes 92% of the total previously announced Resource of 191 Mt @ 99.6% SiO₂ (Muchea Maiden Resource of 20 November 2018) but is expected to

increase with deeper drilling than the hand-auger sampling previously undertaken to estimate the Resource.

The Muchea Mining Lease Application MLA70/1390 has an area of 2,918Ha, see Table 8 below, and covers part of the Exploration Licence E70/4886, Figure 1, which was granted on 27/03/2017.

Table 8: Muchea tenement application details

Tenement	Holders	Application date	Area (km ²)
MLA70/1390	Wisecat Pty Ltd	14/01/2019	29.2

CSA Global has reported the Mineral Resource which is located within the MLA boundary and is summarised in Table 9, below.

Table 9: Muchea Silica Sand Mineral Resource estimate within MLA

Classification	Million Tonnes	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	LOI%	TiO ₂ %
Indicated	12.5	99.7	0.04	0.04	0.2	0.09
Inferred	162.7	99.6	0.04	0.02	0.2	0.08
Indicated + Inferred	175.2	99.6	0.04	0.02	0.2	0.08

** Note: Mineral Resources are reported only from within the VRX nominated MLA and form a subset of the total Muchea Project Mineral Resources as reported to the ASX on 20 November 2018. Differences may occur due to rounding.*

Competent Persons Statements

The information in this Report that relates to Muchea Exploration Results is based on data collected under the supervision of Mr David Reid, in his capacity as Exploration Manager. Mr Reid, BSc (Geology), is a registered member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and the activity being undertaken to qualify as a Competent Person under the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Reid consents to the inclusion of the data in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Grant Louw who is a full-time employee of CSA Global, under the direction and supervision of Dr Andrew Scogings, who is an Associate of CSA Global. Dr Scogings is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. He is a Registered Professional Geologist in Industrial Minerals. Dr Scogings has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Dr Scogings consents to the disclosure of information in this report in the form and context in which it appears.

ASX Listing Rule 5.8.1 Summary

The following summary presents a fair and balanced representation of the information contained within the Mineral Resource Estimate (MRE) technical report:

- Silica sand mineralisation at the Muchea Project occurs within the Bassendean Sand, which extends along the Swan coastal plains of the Perth Basin, parallel to the coast. (ASX LR 5.8.1 geology & geological interpretation)
- Samples were obtained from auger and aircore drilling. Quality of drilling/sampling and analysis, as assessed by the Competent Person, is of an acceptable standard for use in a Mineral Resource estimate publicly reported in accordance with the JORC Code. (ASX LR 5.8.1 Sampling & 5.8.1 Drilling)
- Major and trace elements apart from SiO₂ were analysed using a four-acid digest followed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP-OES) analysis at the Intertek Genalysis, Perth laboratory. Loss on Ignition at 1000°C (LOI) was analysed by Thermal Gravimetric Analyser. SiO₂ was back-calculated by subtracting all ICP major and trace elements plus LOI from 100%, as this is the most accurate way of determining SiO₂ content for samples with very high SiO₂. Certain of the ICP results were verified by X-Ray Fluorescence (XRF) analyses. (ASX LR 5.8.1 Analysis)
- The Mineral Resources were estimated above a 3D wireframe basal surface for the uppermost white silica sand layer. The basal surface is interpreted based on the geological logging, chemical analysis results and chip photography and the extents are limited to within the Ventnor nominated Muchea target area. The surfaces are based on the geological boundaries defined by logged sand types from the drill data and with reference to the publicly available soil mapping data. The surface humus layer is typically about 300 mm thick. In consultation with Ventnor, CSA Global considered that the upper 500 mm (overburden) is likely to be reserved for rehabilitation purposes. This overburden surface forms the upper boundary of the estimated Mineral Resource and is depleted from the reported Mineral Resources. (ASX LR 5.8.1 Estimation methodology)
- Grade estimation was completed using Ordinary Kriging with an inverse distance weighting to the power of two validation check estimate also completed. (ASX LR 5.8.1 Estimation methodology)
- The Mineral Resource is quoted from all classified blocks above the defined basal surface wireframe for the upper white silica sand layer and below the overburden surface layer. (ASX LR 5.8.1 cut-off grades)
- The Mineral Resources are classified as Indicated and Inferred based on drill hole logging, drill hole sample analytical results, drill spacing, geostatistical analysis, confidence in geological continuity, and metallurgical / process test results. (ASX LR 5.8.1 classification)
- Roughly 10% of the interpreted mineralisation is considered extrapolated.
- The JORC Code Clause 49 requires that industrial minerals must be reported “in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals” and that “It may be necessary, prior to the reporting of a Mineral Resource or Ore Reserve, to take particular account of certain key



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characteristics or qualities such as likely product specifications, proximity to markets and general product marketability.” (ASX LR 5.8.1 Mining, metallurgy & economic modifying factors)

- Therefore, the likelihood of eventual economic extraction was considered in terms of possible open pit mining, likely product specifications, possible product marketability and potentially favourable logistics and it is concluded that the Muchea silica sand deposit is an industrial Mineral Resource in terms of Clause 49. (ASX LR 5.8.1 Mining, metallurgy & economic modifying factors)

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Interests in Mining Tenements

WESTERN AUSTRALIA

Arrowsmith Project – Silica

Tenement	Status	Interest at beginning of quarter (%)	Interests relinquished, reduced or lapsed (%)	Interests acquired or increased (%)	Interest at end of quarter (%)
E70/4986	Granted	100	-	-	100
E70/4987	Granted	100	-	-	100
E70/5027	Granted	100	-	-	100
E70/5109	Granted	100	-	-	100
ELA70/5197	Application	-	-	-	-
MLA70/1389	Application	-	-	-	-

Muchea Project – Silica

Tenement	Status	Interest at beginning of quarter (%)	Interests relinquished, reduced or lapsed (%)	Interests acquired or increased (%)	Interest at end of quarter (%)
E70/4886	Granted	100	-	-	100
ELA70/5157	Application	-	-	-	-

Warrawanda Project - Nickel

Tenement	Status	Interest at beginning of quarter (%)	Interests relinquished, reduced or lapsed (%)	Interests acquired or increased (%)	Interest at end of quarter (%)
E52/2372	Granted	100	-	-	100
E52/3447	Granted	100	-	-	100

Biranup Project – Base Metals/Gold

Tenement	Status	Interest at beginning of quarter (%)	Interests relinquished, reduced or lapsed (%)	Interests acquired or increased (%)	Interest at end of quarter (%)
E39/1828	Granted	100	-	-	100
E38/3191	Granted	100	-	-	100
E39/2000	Granted	100	-	-	100
E39/2001	Granted	100	-	-	100
E39/2003	Granted	100	-	-	100
E38/3294	Granted	100	-	-	100

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