



The following is a summary of the activities conducted by VRX Silica Ltd (**VRX Silica or Company**) (ASX:VRX) during the quarter ending 30 June 2019.

## Exploration and Project Development

On 16 April 2019 VRX Silica announced the Company had received strong interest for the purchase of significant tonnages of silica sand products from its Arrowsmith and Muchea Projects following the appointment of Mr Yoonil Kim as its International Sales Manager in November 2018. Mr Kim is a South Korean national with over 15 years' experience marketing and selling silica sand products to glass manufacturers and foundries across the Asia-Pacific region.

The Company has identified numerous markets in the Asia-Pacific region and met with a number of potential offtake customers for the sale of silica sand products from the Arrowsmith and Muchea Projects. The Company will be able to commit to binding offtake agreements following the approval of Mining Permits at its silica sand projects.

VRX Silica has received enquiries and expressions of interest from manufacturers and purchasing agents for smaller shipments of silica sand product for glassmaking in the following countries:

- China (3)
- Philippines (2)
- Thailand (2)
- India (1)
- Japan (1)
- Korea (1)
- Malaysia (1)
- Taiwan (1)

With over 270 glassmaking facilities the Chinese glassmaking industry is the most dominant in the Asia-Pacific region.

Interest to-date for glassmaking quality silica sand totals 1,675,000 tonnes per annum and such interest is expected to increase as the product catalogue is further distributed. The Company has also received enquiries and expressions of interest from organisations in the foundry industry in:

- South Korea (5)
- Japan (1)
- Philippines (1)
- Taiwan (1)

The highest level of demand was from South Korea, which is the world's largest foundry market, predominately in the automobile and ship building industries. Interest to-date for foundry quality silica sand totals 888,000 tonnes per annum and, as for glassmaking silica sand, such interest is expected to increase.

Whilst these expressions of interest may not all lead to binding contracts, the Company is confident of securing adequate offtake to justify the development of its silica sand projects. Further enquiries are expected and the Company will look to progress this strong interest into binding offtake agreements before committing to funding arrangements for processing plant requirements.

## Testwork Results

On 2 May 2019 VRX Silica Limited announced the results of testwork and confirmation assays for recoveries of silica sand commercial products from its Arrowsmith Projects (**Arrowsmith**), located 270km north of Perth, WA, and Muchea (**Muchea**), 50km north of Perth, WA Silica Sand Projects.

The Company has now conducted three iterations of testwork, with the final iteration completed in March of this year by CDE Global, a renowned testwork laboratory and process plant fabricator based in Northern Ireland. The Company has since completed confirmation assays on final products from that testwork through Nagrom Laboratories in Perth, WA.

During the June quarter the Company released a process circuit design, engineering and cost estimate by CDE Global for a plant based on this testwork and the final determination of recoveries is based on this circuit design, which included the attritioning step being conducted twice.

Attritioning is a high energy interaction of grains rubbing on grains which liberates attached fine particles and reduces particle size by breakage on corners and grain boundaries. This reduces contaminants and improves particle shape.

VRX Silica is now confident in the process circuit design and the final silica sand products capable of production. These have been compiled into the products catalogue which the Company continues to distribute and gauge the response, which to-date has been extremely positive.

Based on the testwork and process circuit mass balance data, the following table summarises the recovered products:

Arrowsmith North		
<i>Product</i>	<i>Industry</i>	<i>Recovery</i>
Arrowsmith - N20	Foundry	24%
Arrowsmith - N40 / NF500	Foundry/Glass	60%
Local Market/Filter/Bunker	Filter/Bunker	6%

Arrowsmith Central		
<i>Product</i>	<i>Industry</i>	<i>Recovery</i>
Arrowsmith - C20	Foundry	34%
Arrowsmith - C50/CF400	Foundry/Glass	34%
High TiO <sub>2</sub>	Mineral Sands	9%

Muchea		
<i>Product</i>	<i>Industry</i>	<i>Recovery</i>
Muchea F80C	LCD/Foundry	20%
Muchea F80	Glassmaking	48%
Muchea F150	Glassmaking	20%

***Recoveries based on CDE Global/Nagrom Testwork Mass Balance Data***



The Company has had strong interest for potential offtake of silica sand products from the Asian region and these recoveries are of products which will comply with the requirements of interested customers to date.

## Muchea Mineral Resource Estimate Upgrade

On 20 November 2018 VRX Silica reported a maiden Mineral Resource Estimate (**MRE**) for the Muchea Silica Sand Project (**Muchea**), located 50km north of Perth, WA. Since then, during March 2019 the Company conducted a close spaced aircore drill program at Muchea and on 17 June 2019 the Company announced the results of that program.

The aircore drill program was over an area of 217ha, which is a small portion of the 2,900ha Mining Lease Application area and the most likely starting area for mining. Receipt of the assay results enabled a new JORC 2012 compliant Mineral Resource Estimate (MRE) to be determined for the Muchea Silica Sand Project.

The MRE has increased the JORC 2012 **Indicated Mineral Resource** by 49% to **29 Mt @ 99.6% SiO<sub>2</sub>** and the JORC 2012 **Inferred Mineral Resource** by 4% to **179 Mt @ 99.6% SiO<sub>2</sub>** for a **Total MRE of 208 Mt @ 99.6% SiO<sub>2</sub>**, an overall increase of 9%, see Tables 1 and 2 below.

This MRE update is based on the results of the March 2019 drilling, combined with a reinterpretation of the previously modelled sand layer. The reinterpretation investigated layers of low iron sand which were previously discounted due to colour, and higher levels of clay and organic matter; represented as Al<sub>2</sub>O<sub>3</sub> and LOI<sub>1000C</sub> in the assay dataset. The prior MRE was estimated purely on the percentage of SiO<sub>2</sub> rather than defining all material that was amenable to beneficiation to produce glass and foundry grade silica sand.

The Resource estimate only includes sand three metres above the year 2000 mapped water table level and discounts the top half metre of topsoil which will be used for rehabilitation.

The low variability of results over the Resource area supports the Company expectation that the majority of the Indicated Resource will convert to Probable Reserves in our impending BFS.

Testwork indicates that high-grade silica sand can be produced from Muchea, for which there is strong demand for glassmaking in Asia. Metallurgical testwork to-date has also demonstrated that a section of sand in the Resource, previously discounted due to logged discoloration, can be beneficiated to high-grade silica sand products via conventional washing and screening methods. Future drilling and estimations will include this sand zone which is expected to significantly add to the Resource inventory.

Metallurgical testwork completed to-date confirms this updated silica sand model is considered 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 the glass making and foundry industries.

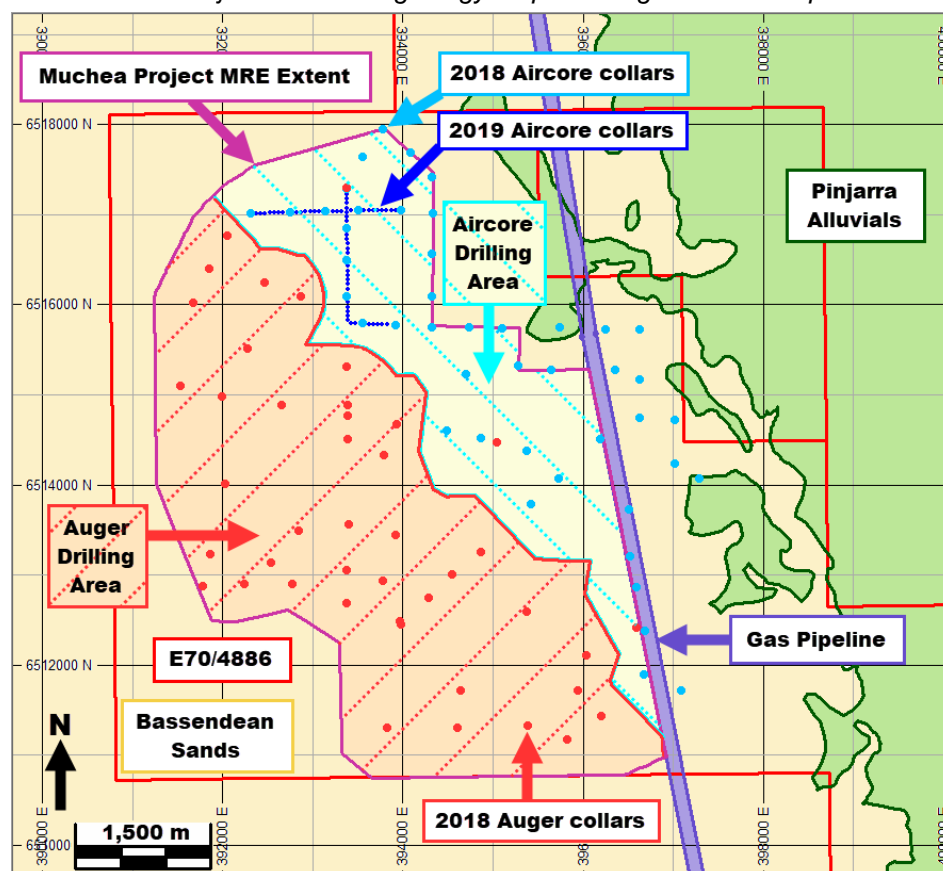
It is anticipated that further testwork focusing on currently discounted sand layers may result in further reinterpretation and upgrades to the Muchea MRE.

A more extensive PoW has been lodged to enable an aircore drill program over areas that have been previously hand augered. Drilling is planned for the September quarter 2019.

Work is ongoing to complete the process for the Mining Lease Applications and Environmental Approvals at both the Arrowsmith and Muchea Silica Sand Projects.

Figure 1 below shows the MRE separated into two areas defined by the type of drill testing. The Auger drilling area has not changed since first reported on 20 November 2018 however the Aircore drilling area has been updated with the additional drilling and reinterpretation.

Figure 1: Mucnea Project schematic geology map showing MRE with separate drill type areas



The MRE results are shown in Table 1, and a plan showing the resource areas and classification is shown in Figure 2.

Table 1: Mucnea Silica Sand Mineral Resource Estimate as at June 2019

Classification	Million Tonnes	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	LOI%	TiO <sub>2</sub> %
Indicated	29	99.6	0.09	0.03	0.22	0.07
Inferred	179	99.6	0.05	0.02	0.23	0.1
<b>Indicated + Inferred</b>	<b>208</b>	<b>99.6</b>	<b>0.06</b>	<b>0.02</b>	<b>0.23</b>	<b>0.1</b>

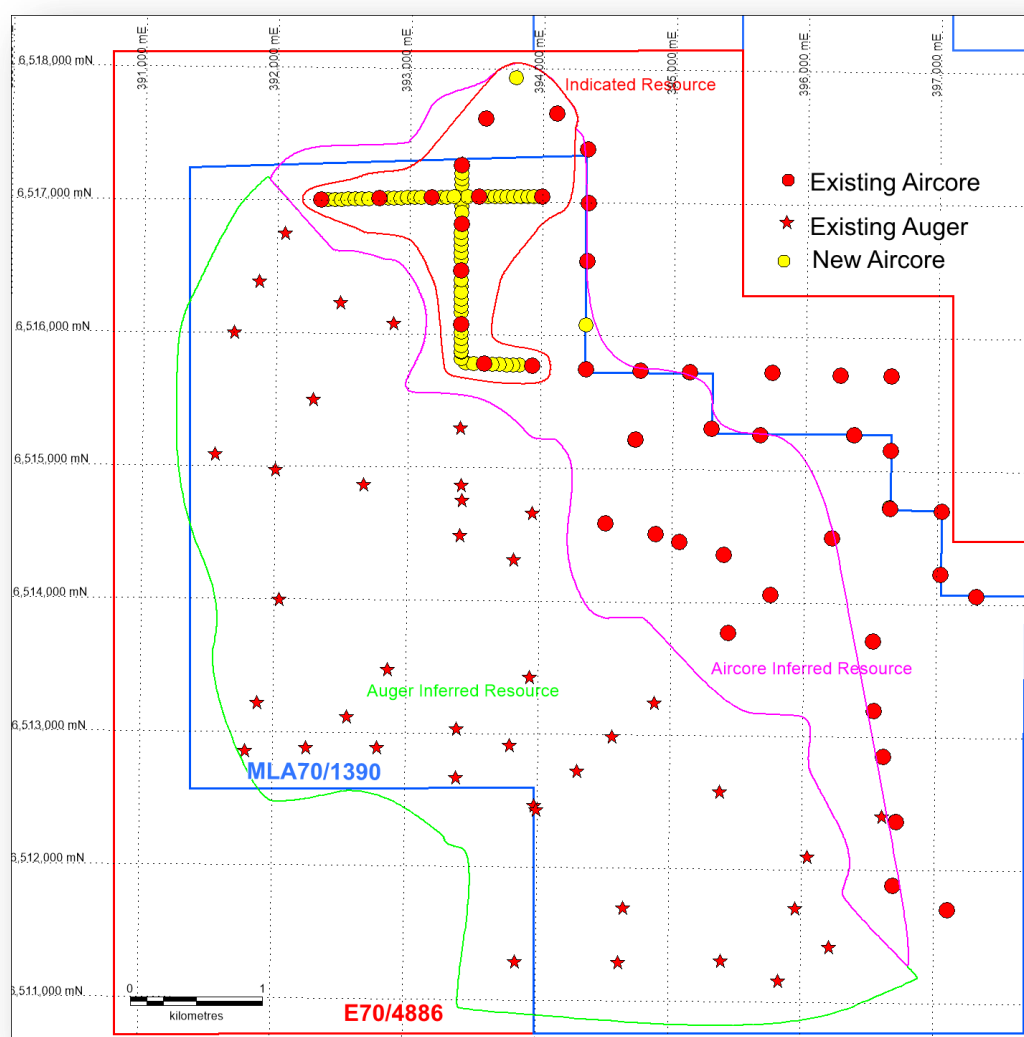
*\*Note: Interpreted silica sand mineralisation is domained above a basal surface wireframe. The upper (overburden) layer within 0.5 m of surface is depleted from the modelled silica sand unit, being reserved for rehabilitation purposes. All classified silica sand blocks in the model are reported. Differences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

Table 2: Tonnage Comparison with Prior estimate

Drill Area	Classification	Maiden MRE (Mt)	June 2019 Update (Mt)	Difference
Aircore	Indicated	19	29	+49%
	Inferred	60	67	+12%
	<b>Indicated + Inferred</b>	<b>79</b>	<b>96</b>	<b>+21%</b>
Hand Auger	Inferred	112	112	
Total	Indicated	19	29	+49%
	Inferred	172	179	+4%
	<b>Indicated + Inferred</b>	<b>191</b>	<b>208</b>	<b>+9%</b>

*\*Note: Interpreted silica sand mineralisation is domained above a basal surface wireframe. 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.*

Figure 2: Muchea Updated MRE areas and classification





## Events Subsequent

### Arrowsmith North Mineral Resource Estimate Upgrade

VRX Silica Limited reported a maiden Mineral Resource Estimate (**MRE**) for Arrowsmith North in October 2018 based on shallow hand auger drilling. However, on 9 July 2019 VRX Silica announced the results of an aircore drill program completed during March 2019 at the Arrowsmith North Silica Sand Project (**Arrowsmith North**), located 270km north of Perth, WA.

Upon receipt of the analytical results a new Mineral Resource Estimate (MRE) for the Arrowsmith North Silica Sand Project was upgraded to a JORC Code 2012 compliant **Indicated Mineral Resource** of **248 Mt @ 97.7% SiO<sub>2</sub>** in addition to an **Inferred Mineral Resource** of **523 Mt @ 98.2% SiO<sub>2</sub>** for a **Total MRE** of **771 Mt @ 98.0% SiO<sub>2</sub>**, an overall increase of **398% on the maiden estimate**, see Tables 3 and 4 below.

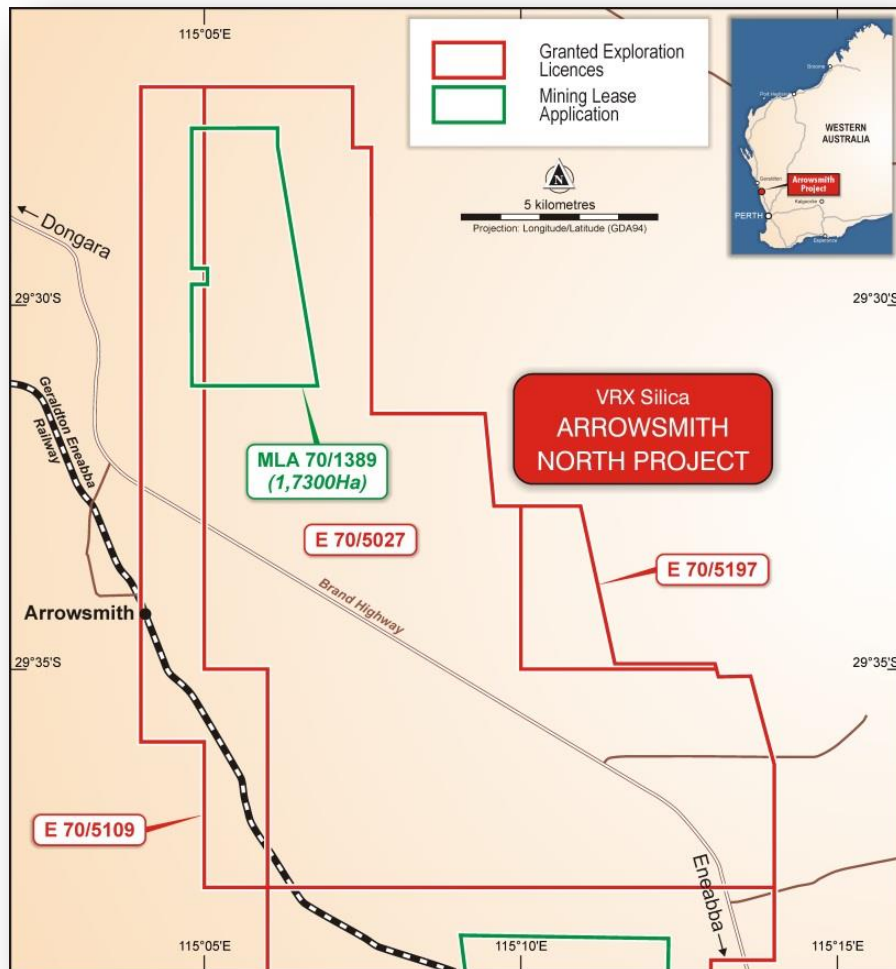
The MRE is wholly within granted tenements E70/5109 and E70/5027 which are 100% owned by VRX Silica and is significant in that it includes an unpredicted 313 million tonnes of white sand at 98.7% silica. The model defines two different sand types, “Yellow” and “White” sand (Tables 3 and 4), which are different with respect to their chemistry and particle size distribution.

The Indicated Mineral Resource is predominately within the Mining Lease application area and most of it is anticipated to convert to Probable Reserves and hence an extremely long-life mining project.

Metallurgical testwork completed to-date confirms this updated silica sand model is considered 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 the glass making, foundry and ceramics industries.

No more drilling is required before the Company will commence mining operations. However, the Company will undertake a further testwork program on the white sand.

This MRE will now allow the Company to finalise estimates of Ore Reserves which will support the impending BFS and work is ongoing to complete the process for the Mining Lease Applications and Environmental Approvals at both the Arrowsmith North and Arrowsmith Central Silica Sand Projects.



*Figure 3: Arrowsmith North Project Location*

The Arrowsmith Project area has a mining depth limitation to be above the water table which is 10 metres below the drilling. The MRE has been estimated to a nominal depth well above the water table and the top half metre of topsoil has been discounted in the MRE as it will be used for rehabilitation.

Figure 4 below shows the drill coverage over the tenements with the underlying sand types shown. The Arrowsmith North Target Area defines the area to which the MRE is constrained and represents the area where there are no current restrictions to mining.

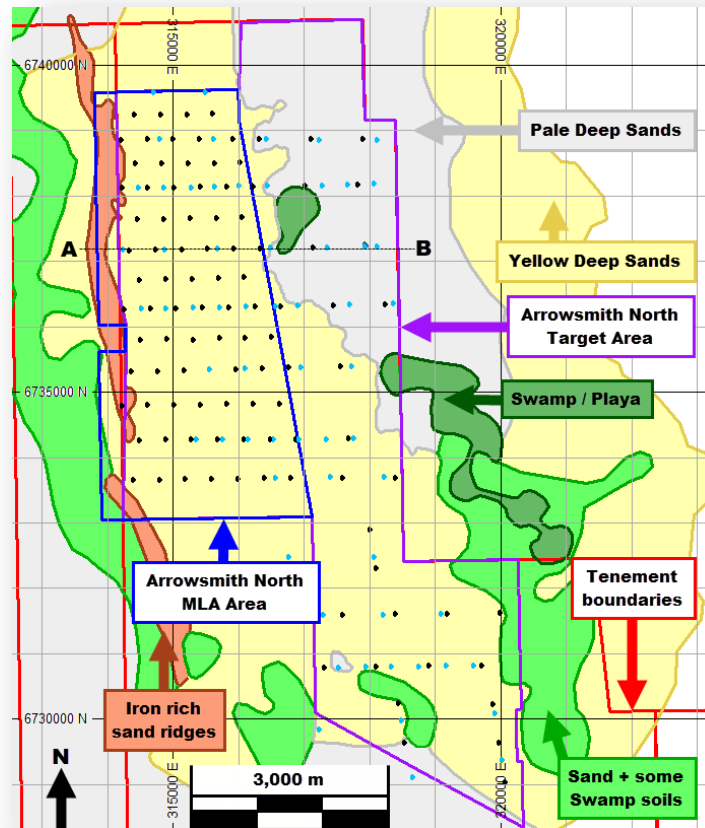


Figure 4: Arrowsmith North Project schematic geology map showing MRE with separate drill type, Black dots = aircore, Blue dots = auger

The MRE results are shown in Table 13, and a plan showing the resource areas and classification is shown in Figure 4.

Classification	Domain	Million Tonnes	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI%
Indicated	White Sand	33	98.7	0.50	0.20	0.20	0.20
	Yellow Sand	215	97.5	1.10	0.40	0.20	0.50
	All Sand	<b>248</b>	97.7	1.00	0.40	0.20	0.50
Inferred	White Sand	280	98.7	0.50	0.10	0.20	0.20
	Yellow Sand	243	97.7	1.00	0.40	0.20	0.50
	All Sand	<b>523</b>	98.2	0.80	0.30	0.20	0.40
Indicated + Inferred	White Sand	313	98.7	0.54	0.15	0.18	0.24
	Yellow Sand	458	97.6	1.08	0.40	0.17	0.52
	All Sand	<b>771</b>	<b>98.0</b>	<b>0.86</b>	<b>0.30</b>	<b>0.17</b>	<b>0.41</b>

\*Note: Interpreted silica sand mineralisation is domained above a basal surface wireframe defined based on drill logging data. The upper (Topsoil) 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.



Table 3: Arrowsmith North Silica Sand Mineral Resource Estimate as at July 2019

Classification	Domain	Maiden MRE (Mt)	Updated MRE (Mt)	Difference
Indicated	White Sand		33	
	Yellow Sand		215	
	All Sand		<b>248</b>	
Inferred	White Sand	44	280	633%
	Yellow Sand	149	243	163%
	All Sand	194	523	270%
<b>Indicated + Inferred</b>	White Sand	44	313	708%
	Yellow Sand	149	458	307%
	<b>All Sand</b>	<b>194</b>	<b>771</b>	<b>398%</b>

Table 4: Tonnage Comparison with Prior estimate

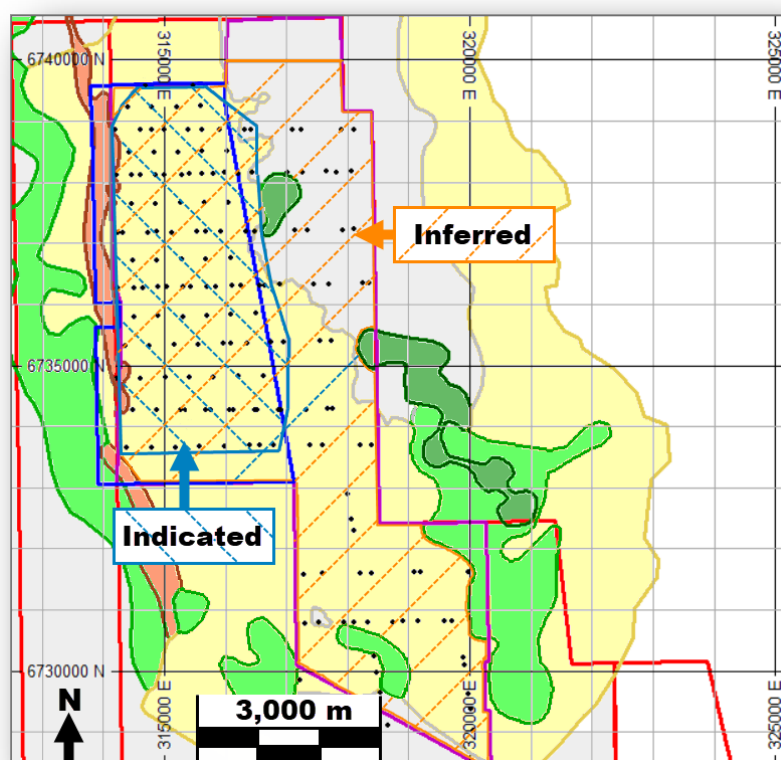


Figure 5: Arrowsmith North Updated MRE by classification.

## China Southern Glass Strategic Alliance

On 11 July VRX Silica Limited announced it had entered into a memorandum of understanding (**MOU**) with CSG Holding Co Ltd (**China Southern Glass** or **CSG**) to form a strategic alliance in connection with the Company's Muchea Silica Sand Project, 50km north of Perth (**Muchea Project**).



China Southern Glass is the largest architectural glass manufacturer in the Peoples' Republic of China (**PRC**), involved in the manufacture and sale of glass products including float glass, display glass, automotive glass, coated glass, mirrors, colour filter glass, solar glass and conservation glass.

The objectives of the strategic alliance include exploring the potential for marketing, promotion and sale in the PRC of silica sand products from the Muchea Project and potential sources of capital finance for the construction of production facilities at the Muchea Project. In addition, the parties will consider potential for the development of a high-quality glass manufacturing facility in Western Australia for silica sand products generated from the Muchea Project.

This strategic alliance further highlights the potential for a significant, World-class silica sand mining operation at Muchea and supports the Company's assessment of increasing silica sand supply constraints in the Asia-Pacific region.

The Chinese glassmaking industry is the most dominant in the Asia-Pacific region and China Southern Glass is the largest architectural glass manufacturer in China and the prospect of working with China Southern Glass and exploring opportunities in the Chinese silica sand market is a positive opportunity for VRX Silica.

In April 2019, the Company announced that it received enquiries and expressions of interest from 20 manufacturers across the Asia-Pacific region with potential annual silica sand sales of over 1.6 million tonnes for glassmaking. The silica sand JORC Mineral Resource identified at both the Company's Arrowsmith Silica Sand Project and its Muchea Project is significant and expected to increase and the Company is capable of producing large quantities of silica sand from each project to satisfy demand.

Under the terms of the MOU, CSG will assist VRX Silica in determining demand and logistics requirements for silica sand supply in the PRC, including specification for silica sand products and tonnages, pricing across a range of specifications, contract supply length and transport alternatives.

The MOU provides that the parties are to act in good faith and fair dealing with one another in a co-operative working relationship, however the alliance is non-exclusive and VRX Silica may continue to deal with other parties in connection with the subject matter of the MOU. In addition, the MOU does not create a binding commitment by either party to enter into any commercial transaction or arrangement. The MOU is for an initial term of 6 months, automatically renewed for one additional period of 6 months. The MOU may be terminated by either party by giving at least 7 days notice.

## Corporate

### Capital Raising

On 2 April 2019 VRX Silica announced it had received commitments for a capital raising via a share placement to professional and sophisticated investors together with existing shareholders to raise approximately \$2.26 million before costs (**Placement**).

The Company used its current placement capacity under Listing Rule 7.1 and 37,666,666 new fully paid ordinary shares at an issue price of \$0.06 per share were issued. VRX Silica directors committed to subscribe for an aggregate of 4,333,333 shares representing approximately \$260,000, subject to shareholder approval which was given at a general meeting of shareholders held on 30 May 2019.

Funds raised under the Placement have been allocated to completion of feasibility studies and progression of environmental approvals and mining lease applications at the Company's Arrowsmith and Muchea Projects. A portion of the net Placement proceeds will be directed towards exploration activities at the Boyatup Project and Warrawanda HPQ Project and for general working capital.

Hartleys Limited (AFSL No 230052) acted as lead manager to the Placement.

## 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
E70/5197	Granted	-	-	100	100
MLA/1389	Application	-	-	-	-
MLA/1392	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	-	-	-	-
MLA/1390	Application	-	-	-	-

#### Boyatup Project – Silica

Tenement	Status	Interest at beginning of quarter (%)	Interests relinquished, reduced or lapsed (%)	Interests acquired or increased (%)	Interest at end of quarter (%)
* E69/3560	Granted	100	-	-	100
E69/3668	Granted	-	-	100	100

- Tenement transferred subsequent to the June Quarter

#### 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