



29 May 2023

VRX COMPLETES ENGINEERING ON ARROWSMITH NORTH PROCESSING PLANT

Highlights:

- ✓ **Detailed engineering complete**
- ✓ **Mechanical equipment list finalised**
- ✓ **Supply tender documents prepared**
- ✓ **Critical timelines established.**

VRX Silica Limited (ASX: VRX) (**VRX** or **Company**) is pleased to announce that it has completed all material engineering work for construction of a 2 million tonne per year silica sand processing plant at its Arrowsmith North Silica Sand Project, 270km north of Perth.

The detailed design phase of the project is largely complete. Remaining minor areas/items will be easily and efficiently detail designed during the execution phase of the project, without affecting the execution schedule.

This phase of engineering has been based on a comprehensive metallurgical testwork program and peer reviewed process circuit design and testing.

The design incorporates some innovative processing techniques which allows flexibility for the Company to produce multiple products subject to market requirements for foundry and glassmaking silica sand.

VRX Managing Director Bruce Maluish said: *“This stage of the project follows an extensive testing program that VRX has conducted over the last few years.*

“The Company has developed with its metallurgical consultants a number of unique processes to produce the most valuable, high yield and high-quality silica sand products possible.

“This design work by the engineering team at ProjX, will allow a very long production regime at Arrowsmith North with low emissions and carbon footprint.”

ASX: VRX

Capital Structure

Shares on Issue:

560.4 million

Unlisted Options:

41.3 million

Corporate Directory

Paul Boyatzis

Non-Executive Chairman

Bruce Maluish

Managing Director

Peter Pawlowitsch

Non-Executive Director

David Welch

Non-Executive Director

Ian Hobson

Company Secretary

Silica Sand Projects

Arrowsmith Silica Sand
Projects, 270km north of
Perth, WA.

Muchea Silica Sand
Project, 50km north of
Perth, WA.

Boyatup Silica Sand
Project, 100km east of
Esperance, WA.

The Company is actively
assessing other silica
sand projects in
Australia.

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DETAILED DESIGN

The following areas/items are detail designed, peer reviewed and ready to progress to execution:

- Site and plant layout drawings.
- The attritioning/flotation building (structural, mechanical, and concrete packages).
- The product area (structural, mechanical, and concrete packages).
- Rejects cyclone stacker.
- Civil works for the plant & product area.
- Civil works for the southern access road.
- Civil works for the Brand Highway interface. (Note that this has been fully approved by Main Roads WA).
- Concrete has been detail designed.
- Electrical reticulation design and single line diagrams.
- Process Flow Diagrams (PFDs).
- Piping & Instrumentation Diagrams (PIDs).
- Circuit mass balance.
- Water management
- Mechanical Equipment List (MEL).
- Fabrication drawings verified.
- 3D design model.

The functional control philosophy document is currently being developed.

The following areas/items are concept designed only and will be detail designed or completed during the execution phase of the project:

- The mine plant area, including the feed hopper, transfer conveyors, trommel and other associated equipment such as water tank & pump skids, pipe systems etc. This area is all concept designed but is essentially comprised of vendor equipment linked together. The trommel is sourced and refurbished, and the other vendor equipment has been tendered and the preferred vendor selected. Finalisation of this area and design of ancillary items will be completed during the execution phase.
- Non-Process Infrastructure (NPI) will be designed/selected during the execution phase but have been included in site layout drawings. This includes items such as the following:
 - Admin, crib, toilet buildings etc and associated water and wastewater system.
 - Fire and raw water services.
 - Workshop, stores, laydown, etc.
 - Vehicle wash bays.

EQUIPMENT

The following major equipment has been tendered, selected as preferred and therefore used in the detailed design:

- Cyclone cluster
- Attritioners
- Hydrofloat separators
- Classifiers
- Conditioning tank
- Thickener
- Transformers
- Ring main unit
- MCC/switchrooms
- Product dewatering screens
- Feed hopper and conveyors (preferred vendor yet to be selected)
- Slurry pumps (preferred vendor yet to be selected)
- Water pumps
- Air compressors

The following minor equipment is yet to be officially tendered:

- Bore pumpset.
- Transportable buildings.
- Samplers.
- Pipe supply.
- Fabricated steelwork, chutes, etc.

Several items of secondhand process equipment have been purchased and refurbished:

- A second hand feed trommel was purchased, refurbished, and is now in storage in a Bunbury fabrication contractor's premises. This machine is the primary screening machine at the mine plant.
- A vibrating screen (Schenck vibrating banana screen) was purchased, refurbished, and is now in storage at a Bunbury workshop. This machine is the final product sizing screen.



Feed Trommel



Schenk vibrating banana screen

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PROJECT EXECUTION SCHEDULE

The most recent execution schedule uses the following key milestones prior to the decision to commence construction:

- Finalise finance and establish commencement date.
- Site access date to construct the northern access road.
- Approval to place orders for major long lead equipment.
- Site access date for plant construction.

PROJECT COST ESTIMATE

The baseline project cost estimate, determined at a preliminary level in 2019, was \$28.3M (including ~\$6M contingency). The cost estimate will be updated during 2023 as key equipment has been re-tendered. The cost estimate will be refined and updated prior to the decision to commence construction.

MAJOR EQUIPMENT PROCUREMENT

VRX has prepared a summary of the major long lead time equipment that will be procured and has recently refreshed the quotations for most of these items. Some equipment has not been retendered for some time and will require retendering closer to the execution phase. Timing for procurement is subject to the EPA approvals process.

When evaluating tenders VRX uses a Tender Evaluation (TEV) process to summarise the tender submissions and to essentially land on the preferred tender.

SHORT TERM ONGOING WORKS

VRX intends to carry on with the following development tasks.

- Rearrange the execution cost estimate to show costs by area rather than by task, for inclusion in the data room for DD by financiers. This is a short-term priority.
- Evaluate recent retendering of key major equipment and follow up on other equipment that has not been retendered recently.
- Continuously update a summary of lead times for major equipment suppliers to carry out the detailed design of their equipment, in order to reduce their equipment lead times.
- Continue to refine the execution cost estimate in light of recent retendered equipment and other information.
- Refine the execution schedule estimate in light of recent retendered equipment and other information.
- Produce a manning histogram for the execution phase and investigate accommodation planning as necessary.
- Review the Operating & Control Philosophy.
- Liaise with the power provider to assist with the development of the preferred power option

About VRX Silica Limited

VRX Silica Limited (ASX: VRX) is the most advanced pureplay silica sand company listed on the ASX, developing its 100% owned silica sand projects at Arrowsmith (North, Brand and Central), Muchea and Boyatup in Western Australia.

Silica sand is the most used commodity on the planet after air and water. It is the main ingredient in all types of glassmaking, including specialty solar panel and high-tech glass, and foundry casting. It is a finite resource that is running out, with the Asia-Pacific region experiencing an ever-growing supply shortfall that is driving up prices.

Arrowsmith is located 270km north of Perth. Arrowsmith North boasts a minimum 25-year mine life capable of producing more than 2Mt tonnes per year of high-grade (99.7% SiO₂)* silica sand for export to the foundry, container glass and flat glass markets in Asia, with permitting well advanced, and will lead production.

Muchea, located 50km north of Perth, is an ultra-high-grade (99.9% SiO₂)* silica sand project capable of producing sand required for ultra-clear glass for solar panels and other high-tech glass applications.

Boyatup, located 100km east of Esperance, is under development and capable of producing sand for the glass market.



*Information relating to grades are extracted from releases to ASX on 28 August 2019 and 11 November 2022 (Arrowsmith North) and 18 October 2019 (Muchea). The company is not aware of any new information or data that materially affects this information.