

**CARBINE RESOURCES**  
LIMITED

ASX / MEDIA ANNOUNCEMENT

15 December 2021

## **Carbine Completes Maiden Drilling at Muceha West Silica Sand Project**

### **HIGHLIGHTS**

- ◆ **Carbine owns 100% of the highly prospective Muceha West Silica Sands Project**
- ◆ **Carbine has completed its 2021 drill program testing the higher grade (99.7% - 99.9% SiO<sub>2</sub>) Eastern Area\***
- ◆ **233 holes were drilled along existing tracks for 1,892m producing 1,088 samples**
- ◆ **All samples have been delivered to Intertek Genalysis for assaying, first results expected in January 2022**
- ◆ **Lines 1 and 2 run parallel and are closely spaced, sufficient to undertake a Mineral Resource Estimate**
- ◆ **Widenbar and Associates have been engaged to complete the Mineral Resource Estimate**
- ◆ **Independent Metallurgical Operations have been engaged to undertake process studies on the excess sample material**
- ◆ **Program of Work application underway for 2022 drilling program**

**Carbine Resources Limited (ASX: CRB) (the Company)** is pleased to provide an update on its 100% owned Muceha West Silica Sands Project, Western Australia (**Muceha West, the Project**).

Carbine has now completed its first drilling program at Muceha West since acquisition of the Project in July 2021. The maiden drill program was designed to:

- ◆ advance the information available at the time of acquisition;
- ◆ identify the area best suited for a Mining Licence application; and
- ◆ provide sufficient data to undertake an initial Mineral Resource Estimate in order to commence mining studies.

As announced on 27 July 2021, the results of two reports have indicated that E70/4905 has the potential to host a substantial, high grade, low impurity silica sand deposit. The potential final processed grade is significant as it meets all the specifications for flat and container glass markets and for foundry glass at the top end of silica sand consumption market and the upper price ranges for these products.

## MUCHEA WEST SILICA SAND PROJECT

### Location, Access & Proximal Infrastructure

The Muchea West Project is located approximately 40km north-northeast of Perth and approximately 500m to the west of Muchea. Direct access from the tenure is via the Brand Highway thence via farm tracks and fence lines. Both the Brand Highway and the Moora-Kwinana Railway provide a direct connection with the Kwinana Bulk Terminal.

The Muchea West Project is located directly adjacent to VRX Silica Ltd's Muchea Project.

### Tenure

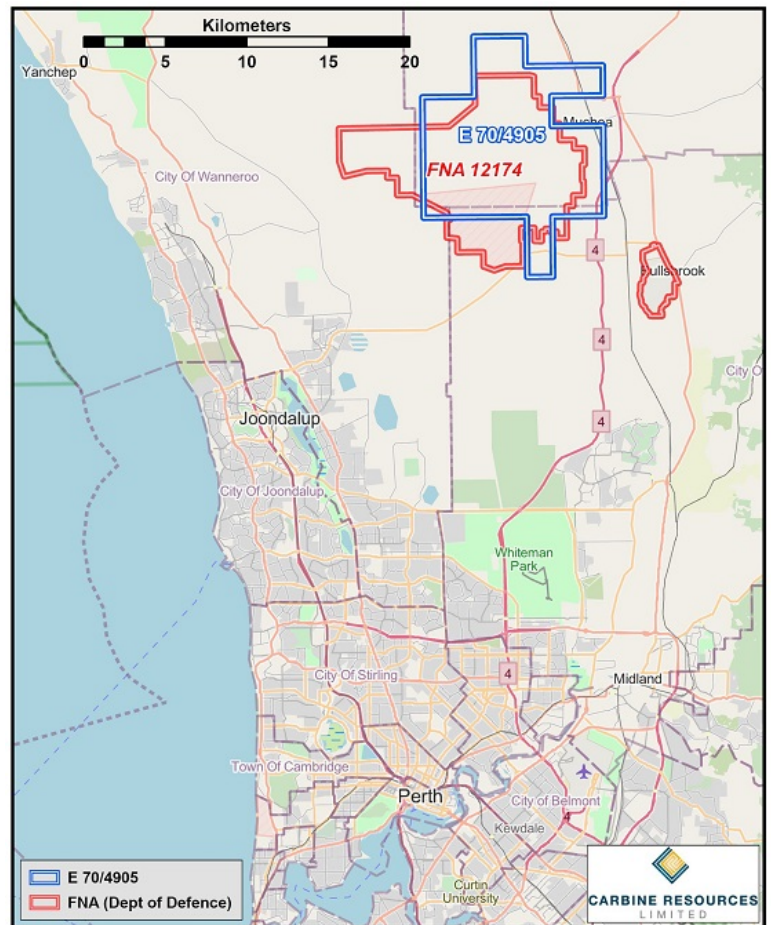
The Muchea West Project covers a land area of 102km<sup>2</sup> and consists of a single granted exploration licence, E70/4905.

### Project Geology

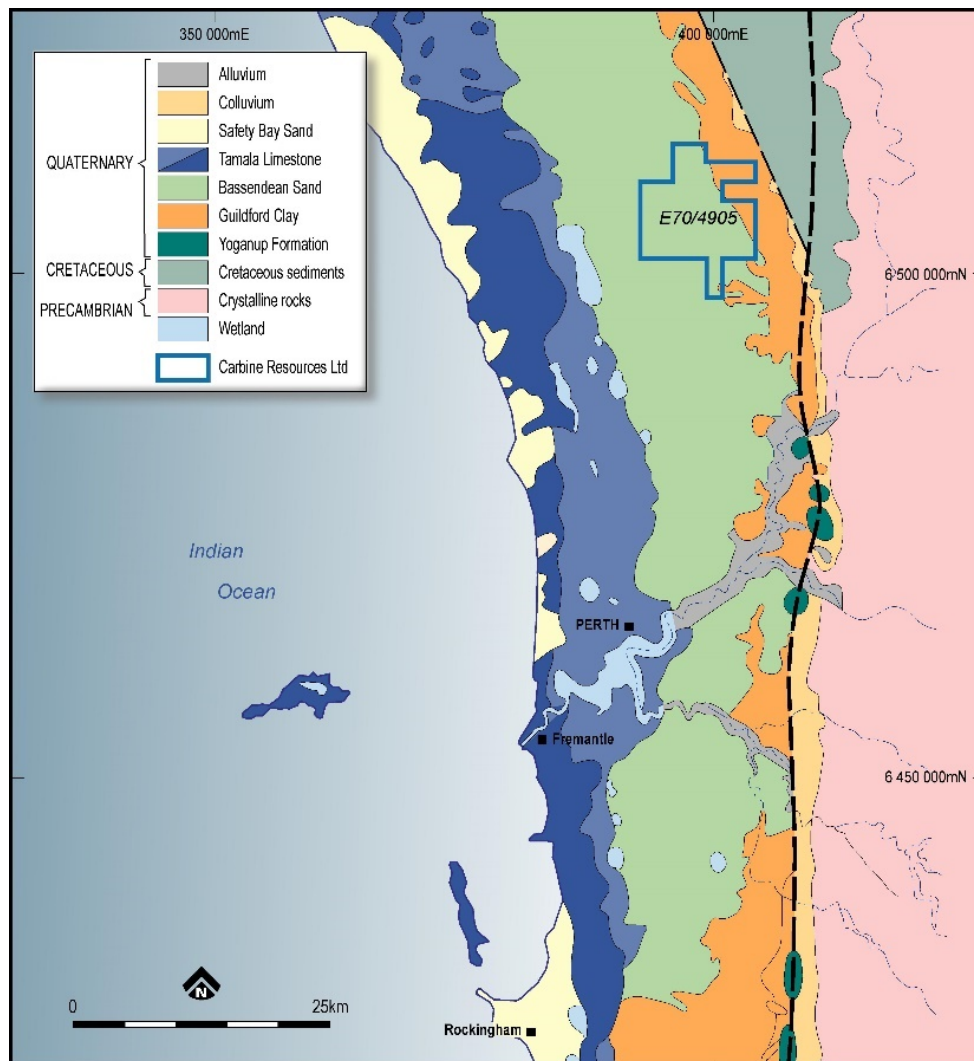
The Project is underlain by the Bassendean Sand Formation, which extends over large areas of the Swan Coastal Plains of the Perth Basin from about 23 km north of Jurien, to about 15km southwest of Busselton. The Bassendean Sand Formation is considered to have a maximum thickness of about 45 m, and the unit is found as a strip parallel to the coast, having a width of about 10-20 km, and its western edge about 5-10km inland. Concretionary ferruginous material, locally known as "coffee rock", is developed discontinuously in the sand near the groundwater table. In the Tenement, good quality silica sand overlies iron rich brown sand, occasionally interspersed with ferruginous nodules.

The upper units of the Bassendean Sand Formation are typically clean, well-rounded and well sorted sands. At depth, it is commonly brown to dark brown with high iron contents, however closer to the surface the sand is cream/white. The physical, chemical and mineralogical characteristics of the Bassendean Sands can vary considerably, resulting in variation in the quality of the sand regionally as well as locally. In general, the Bassendean Sand Formation is covered with very little or no overburden.

The region surrounding the Project has been explored for both silica sand and mineral sands.



*Figure 1: Project Location*



*Figure 2: Project Geological Setting*

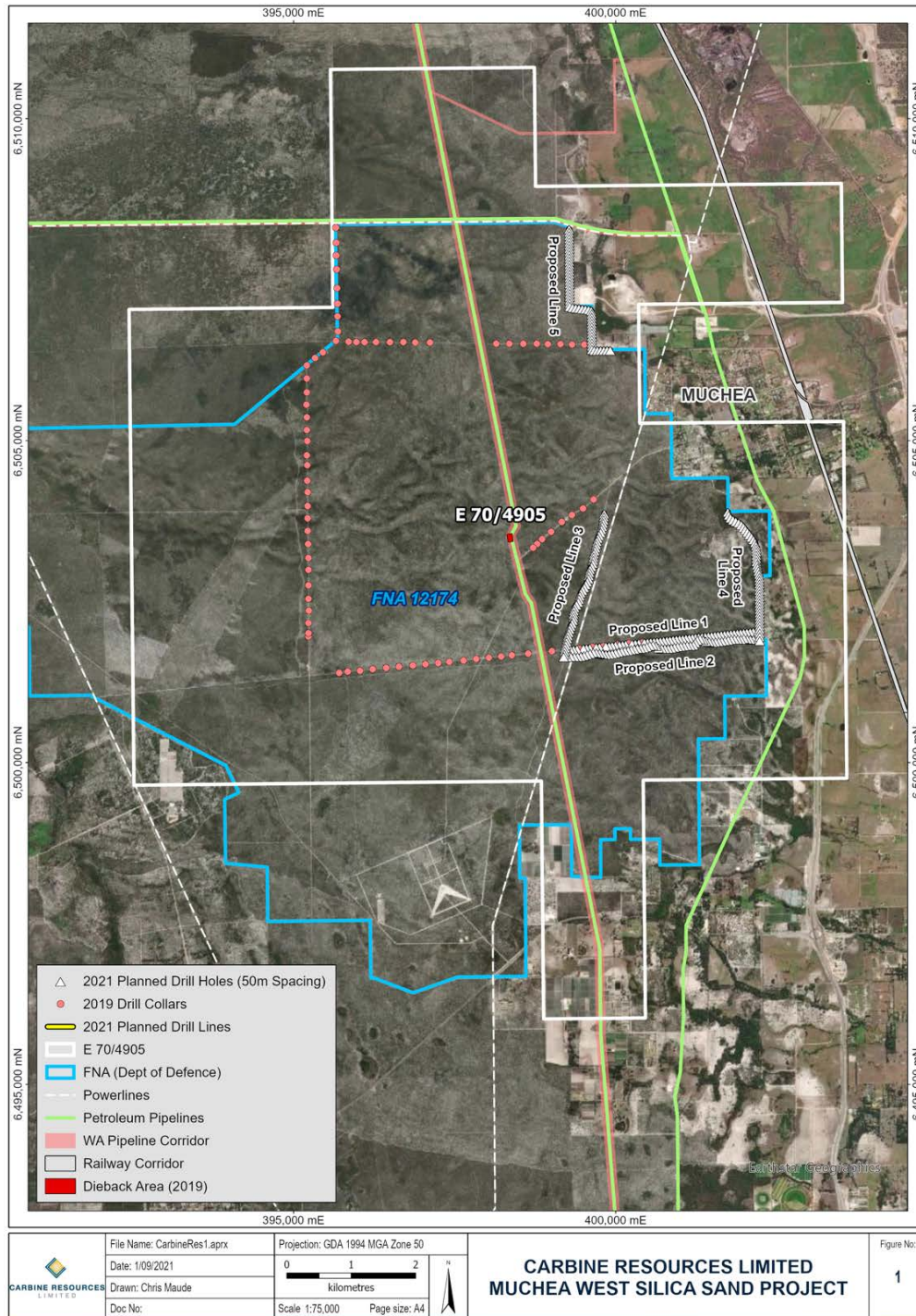
### Previous Exploration Undertaken

The region surrounding the Project has been explored for both silica sand and mineral sands.

A total of 82 vacuum drill holes (78 drill holes to a depth of 10m and 4 drill holes to depths between 15m and 20m) were drilled at nominal 200m spacing on six drill lines along existing tracks (as shown in Figure 3 below) within the tenement area. This drilling was completed by Australian United Silica Corporation Pty Ltd (**Ausco**). Previously the area within the tenement has been drilled for water and this drilling resulted in 28 water bores.

### Current Exploration Activities

Carbine's maiden drill program consisted of a total of 233 vacuum drill holes which were drilled at nominal 50m spacing on five drill lines along existing tracks (as shown in Figure 3 below) within the tenement area. This drilling was completed by Strataprobe Pty Ltd.



**Figure 3: Drill Collar Plan**

The drilling encountered unconsolidated sand and was terminated either at designated depth or the water table. The water table was in most places higher than expected due to the exceptional rainfall in the preceding two years. For the vacuum drilling, 1 metre downhole samples were collected at each drilling location. Vacuum drill samples are collected in a plastic tube and riffle split into two sample bags. One of the samples is prepared for laboratory and the other is retained for repeat analysis, process studies and QA/QC purposes. The sample splitter and vacuum tube are cleaned regularly to prevent sample contamination.

Drilled samples for each 1 m interval were also placed into chip trays which were photographed to provide a permanent record of the downhole lithology. Detailed visual assessment and logging of sample recovery are provided in the drill logs. The first metre of all the drill holes is mainly the humus layer and, as such, not assayed.

The sample assays will determine the major and trace elements such as SiO<sub>2</sub> (%), Fe<sub>2</sub>O<sub>3</sub> (%), Al<sub>2</sub>O<sub>3</sub> (%), CaO (%), MgO (%), K<sub>2</sub>O (%), TiO<sub>2</sub> (%) and LOI (%). Major and trace elements in exception to SiO<sub>2</sub> will be analysed using a four-acid digest followed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP-OES) analysis. Loss on Ignition (LOI) at 10000C will be analysed by Thermal Gravimetric Analyser. SiO<sub>2</sub> will be back calculated by subtracting all ICP major and trace elements plus LOI from 100%.

A total of 1,088 samples have been transported to Intertek Genalysis Laboratories, with results expected in January 2022.



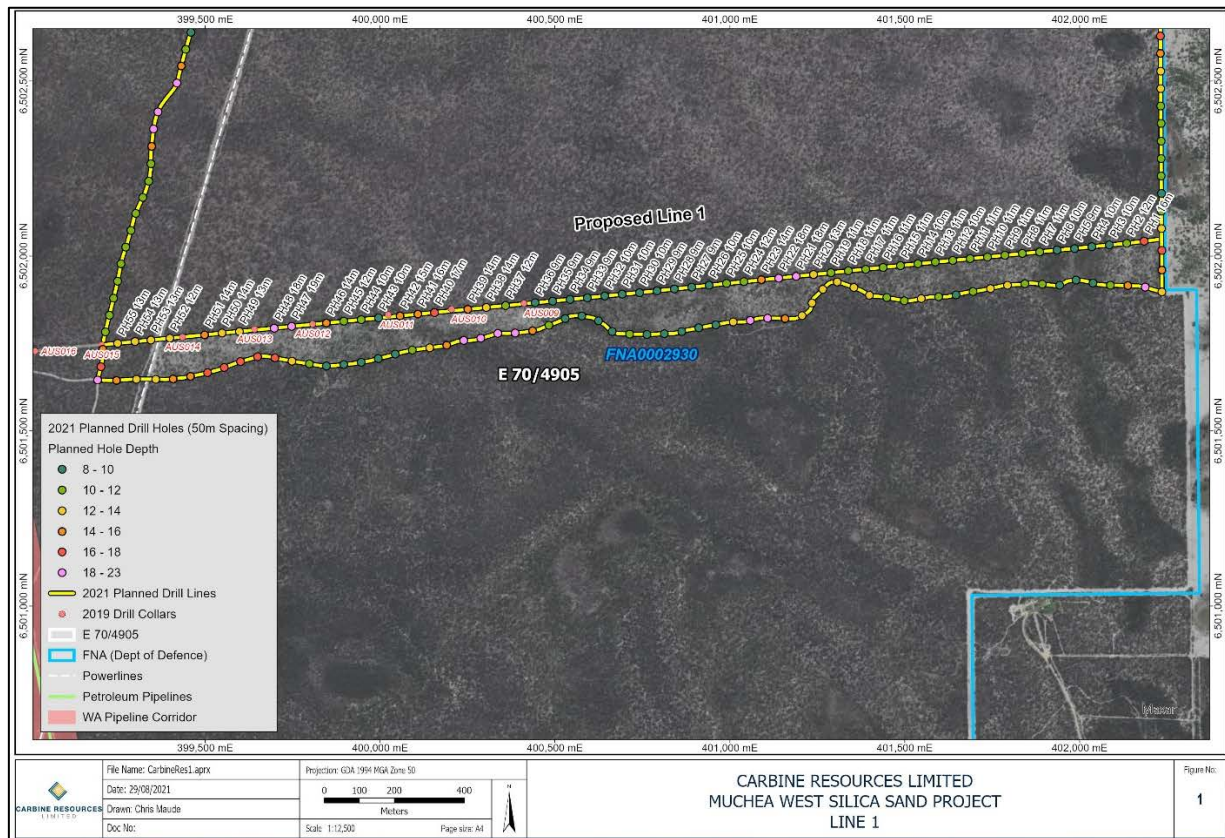
*Figure 4: Vacuum drilling line 5*

## Studies

A number of studies have been commissioned by Carbine to further progress the Muchea West Project and to advance towards a Mining Licence application.

Drill lines 1 and 2 (Figure 3) are spaced close enough for the sample results to be used to complete a Mineral Resource Estimate (**MRE**) within the JORC 2012 guidelines.

To this end, Widenbar and Associates have been engaged to undertake the MRE. The Principal Geologist, Lynn Widenbar, is a Member of the AusIMM and a competent person for this style of deposit.



**Figure 5: Drill spacings Lines 1 and 2**

Independent Metallurgical Operations (IMO) will undertake beneficiation process optimisation studies utilising the drill samples produced from the recent programme and, if necessary, the samples from the earlier 82 holes completed prior to Carbine’s acquisition of the Muchea West Silica Sand project.

Final product from these trials will be available to Carbine to allow for the commencement of discussions regarding offtake from any future operation.

PGV Environmental have been contracted to commence a botanical survey as a prerequisite for the lodging of a Program of Work (PoW) with the Department of Mines, Industry Regulation and Safety (DMIRS). Other contracts to complete the PoW process will be awarded in the near future.

### Proposed Exploration

The results of this first drilling campaign completed by Carbine will define the second and definitive campaign of resource drilling. The work required to allow Carbine to apply for access and approval of this PoW has commenced or is being put in place.

Carbine will commence drilling at Muchea West after permission is granted by all relevant parties and a survey has been completed to clear the drilling locations. The optimum period for this drilling is March to May 2022.

The proposed phase 2 drill program is for up to 1,000 holes and 10,000m.

The completion of this drilling will feed into a Definitive Feasibility Study that will include Resource/Reserve estimations, final processing options, transport and infrastructure studies and the production of bulk samples for potential client engagements.

At the completion of this process Carbine expects to be in a position to apply for a Mining Licence and Mining Approvals.

### **Summary**

Carbine is on schedule with its proposed exploration budget, having completed its first drill campaign and commenced the scoping studies for resource and processing.

Work is underway to gain access for the second, and definitive, drill campaign with expectations for completion in H1, 2022.

This announcement is approved for release by the Board of the Company.

### **For further information, please contact:**

**Peter Batten**  
**Managing Director**  
**+61 (8) 6142 0986**

### **COMPETENT PERSON'S STATEMENT**

The information in this report that relates to historical exploration results were initially reported by the Company to ASX on 1 April 2021 and again on 22 July 2021. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.